GV-300

SERVICE MANUAL

US Model
Canadian Model

VIDEO
WALKMAN

SPECIFICATIONS

System

Video recording system	Rotary two-head helical scanning FM system
Audio recording system	Rotary head, FM system
Video signal	EIA standard, NTSC color
Usable cassettes	8 mm video format cassettes
Tape speed	SP: approx. 1.43 cm/sec. LP: approx. 0.72 cm/sec.
Recording time	SP mode: 2 hours LP mode: 4 hours (with Sony P6-120 cassette)
Playback time	SP mode: 2 hours LP mode: 4 hours (with Sony P6-120 cassette)
Fast forward/rewinding time	Approx. 6 minutes (with Sony P6-120 cassette)

LCD section

Picture	4 inches measured diagonally 8.2 × 6.2 cm (3 1/4 × 2 1/2 inches)
On-screen display	TN LCD/TFT active matrix method Total picture-element number: 112,086 (479 × 234)

Tuner section

Channel coverage	VHF: 2 – 13 channels UHF: 14 – 69 channels Cable TV channels: A-8 – A-6, A-2 – W, W + 30 – W + 84
Antenna input	75-ohm minijack for VHF/UHF

Inputs/outputs

VIDEO/AUDIO IN/OUT	Selectable automatically according to the operation
Video input	Phono jack, 1 Vp-p, 75 ohms, unbalanced, sync negative
Video output	Phono jack, 1 Vp-p, 75 ohms, unbalanced, sync negative
Audio input	Phono jack, – 7.5 dBs (0 dBs = 0.775 Vrms), input impedance more than 47 kilohms
Audio output	Phono jack, – 7.5 dBs (330 mV) at load impedance 47 kilohms, output impedance less than 10 kilohms
Speakers	16 ohms, 150 mW
Earphone	Stereo minijack, 8 ohms × 2
CONTROL S	Minijack
Camera input	12-pin

Timer section

Clock	Crystal lock
Time indication	12-hour cycle
Timer setting	Only for recording, 1 event/24 hours

General

Power requirements	Battery mounting surface input: 6.0 V (battery pack) DC jack input: 7.5 V (AC power adapor), 6.5 V (DC pack DCP-77)
Power consumption	6.9 W (for continuous playback)
Operating temperature	0°C to 40°C (32°F to 104°F)
Storage temperature	– 20°C to 60°C (– 4°F to 140°F)
Dimensions	129 × 71 × 226 mm (w/h/d) (5 1/8 x 2 7/8 x 9 inches)
Weight	Approx. 1.1 kg (2 lb 7 oz) not incl. battery pack
Accessories supplied	Stereo earphones (1) Signal splitter (1) Carrying case (1) Battery pack NP-77 (1) AC power adaptor AC-V50 (1) Lithium battery (1)

AC-V50

Power consumption	23 W
Power requirements	100 – 240 V AC, 50/60 Hz
Output voltage	DC OUT: 7.5 V, 2 A in operating mode
Battery charge terminal:	10 V, 1.3 A in charge mode
Operating temperature	0 C°to 40°C (32°F to 104°F)
Storage temperature	– 20°C to 60°C (– 4°F to 140°F)
Dimensions	Approx. 71 × 45 × 144 mm (w/h/d) (2 7/8 × 1 13/16 × 5 3/4 inches) including projecting parts and controls
Weight	Approx. 400 g (14 oz)

Design and specifications are subject to change without notice.

— Continued on next page —

For MECHANICAL ADJUSTMENT, refer to the "8mm Video MECHANICAL ADJUSTMENT MANUAL III (U MECHANISM)" (9-972-732-11)

MICROFILM

8 VIDEO TV RECORDER

SONY®

LIST OF RECOMMENDED ACCESSORIES

	Model name	Page
Battery pack	NP-77H, NP-66H, NP-55	11
Battery charger	BC-77	
Car battery charger	DC-V30	11
DC pack	DCP-77	17
Color video camera	CCD-G1	56
Antenna connector	EAC-40	54
Signal splitter	EAC-45	54
Antenna cord	CCD-6M, CCD-2	54
Car antenna	VCA-3W, VCA-4E	54
Pan tilter	HVR-200	59
Connecting cord	VMC-910MS/920MS (1m/2m) VMC-810S/820S (1m/2m) VMC-710M/720M (1m/2m)	60
Car connecting pack	CPA-2	
Video walkman hood	VCV-GV300	
Cleaning cassette	V8-25CLH	70
RFU adaptor kit	RFU-89UCKA	63

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITE!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

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SECTION 1
GENERAL

This section is extracted from instruction manual.

Features

The "Video Walkman" GV-300 is an 8mm video recorder with a LCD (Liquid Crystal Display). Its compact and lightweight design allows you to watch TV programs and video tapes anywhere and anytime you like.

With this video TV recorder, you can:
— view the playback picture of 8 mm video tapes.
— view TV programs.
— record TV programs.

In addition, by connecting it to a video camera (not supplied), you can record pictures with the camera, and play back the recorded pictures on it immediately.

Other features

— **Hi-fi stereo for high quality sound ***
— Stereo TV tuner for enjoying stereo programs
— Index function for finding the desired scenes quickly
— CRYSTAL-CLEAR still/slow/picture search on LCD
— Timer-activated recording
— SLEEP timer for turning off the unit automatically
— MEGA BASS circuit for dynamic bass sound

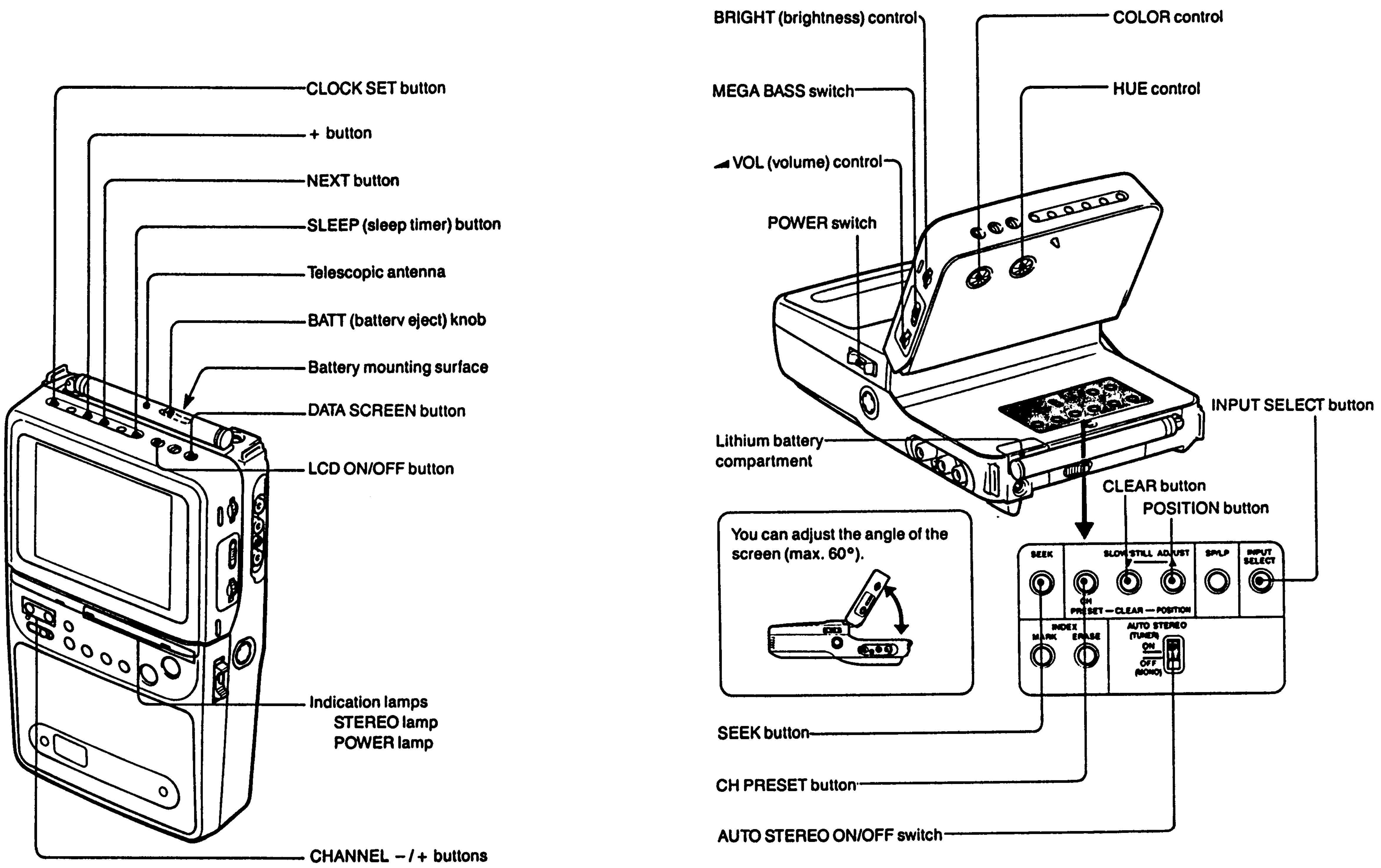
*** Hi-fi Stereo System**

On the 8 mm video standard track, the sound is recorded/played back in Hi-fi monaural. The PCM digital stereo sound is recorded/played back on the PCM track as an option.
With this unit, Hi-fi stereo sound can be recorded on the standard track.
To maintain compatibility with the conventional Hi-fi monaural equipment, the Hi-fi stereo sound is recorded as L – R sound using the 1.7 MHz carrier and L + R sound using the 1.5 MHz carrier as the FM audio signal.
To play back the tape recorded by its hi-fi stereo system, this unit uses a matrix circuit to produce the L and R stereo sounds separately. When conventional Hi-fi monaural equipment is used to play back a tape recorded in Hi-fi stereo, it will produce the L + R monaural sound because it can reproduce only the 1.5 MHz carrier.
The Hi-fi stereo system of this unit provides a live stereo sound atmosphere even when using the 8 mm video standard track.

This unit uses 8 mm video format cassettes. It records in the SP mode (approximately 1.43 cm/second) and the LP mode (approximately 0.72 cm/second) and can play back in the SP mode and LP mode. The quality of the playback picture in the LP mode, however, will not be as good as that in the SP mode.

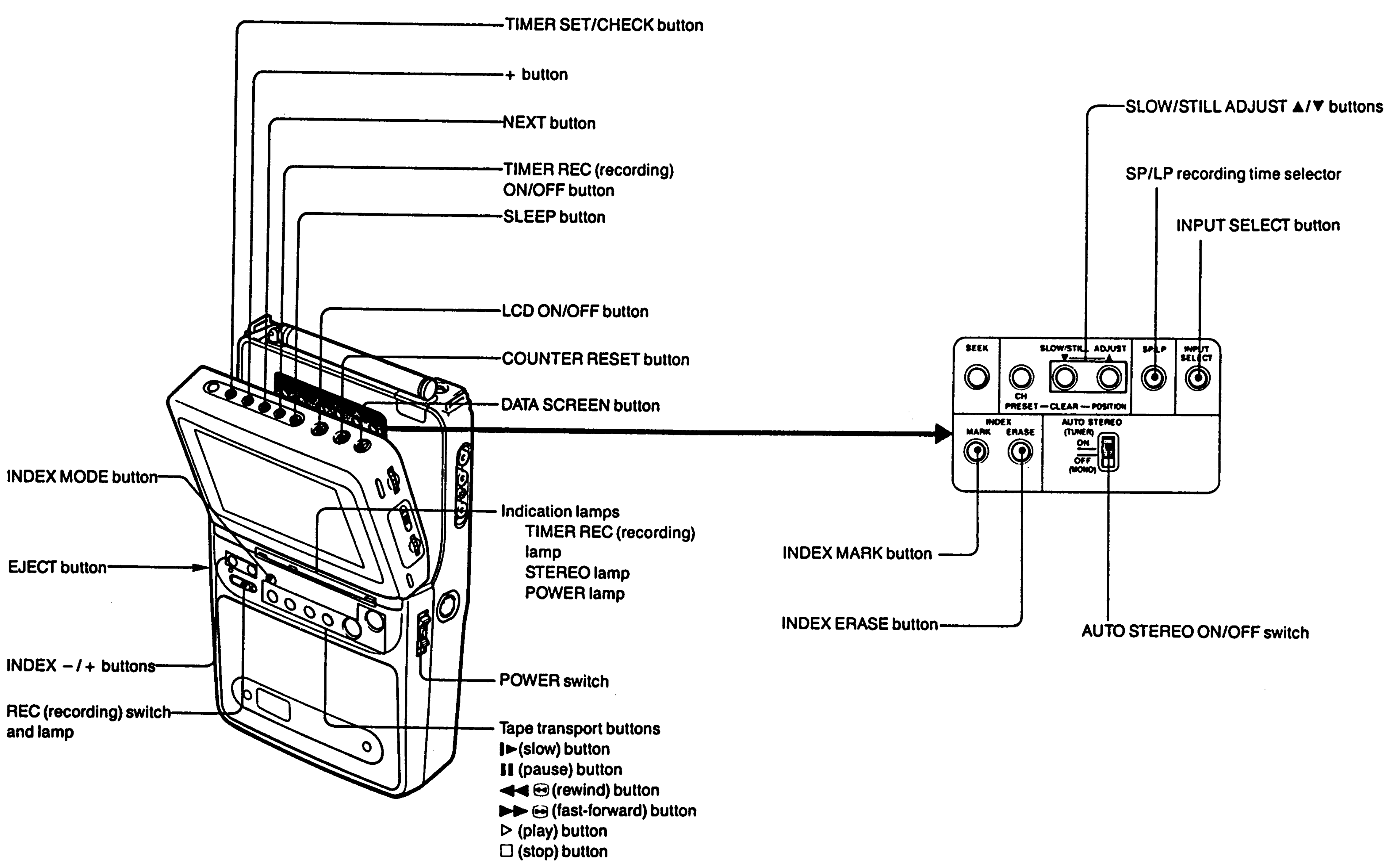
Location of Parts and Controls

Parts used for watching TV programs


CLOCK SET button
+ button
NEXT button
SLEEP (sleep timer) button
Telescopic antenna
BATT (battery eject) knob
Battery mounting surface
DATA SCREEN button
LCD ON/OFF button
Indication lamps
STEREO lamp
POWER lamp
CHANNEL –/+ buttons
BRIGHT (brightness) control
COLOR control
MEGA BASS switch
HUE control
VOL (volume) control
POWER switch
INPUT SELECT button
Lithium battery compartment
CLEAR button
POSITION button
SEEK
SLOW/STILL ADJUST
SP/LP
INPUT SELECT
CH
PRESET — CLEAR — POSITION
INDEX
MARK
ERASE
AUTO STEREO
(TUNER)
ON
OFF
(MONO)
SEEK button
CH PRESET button
AUTO STEREO ON/OFF switch

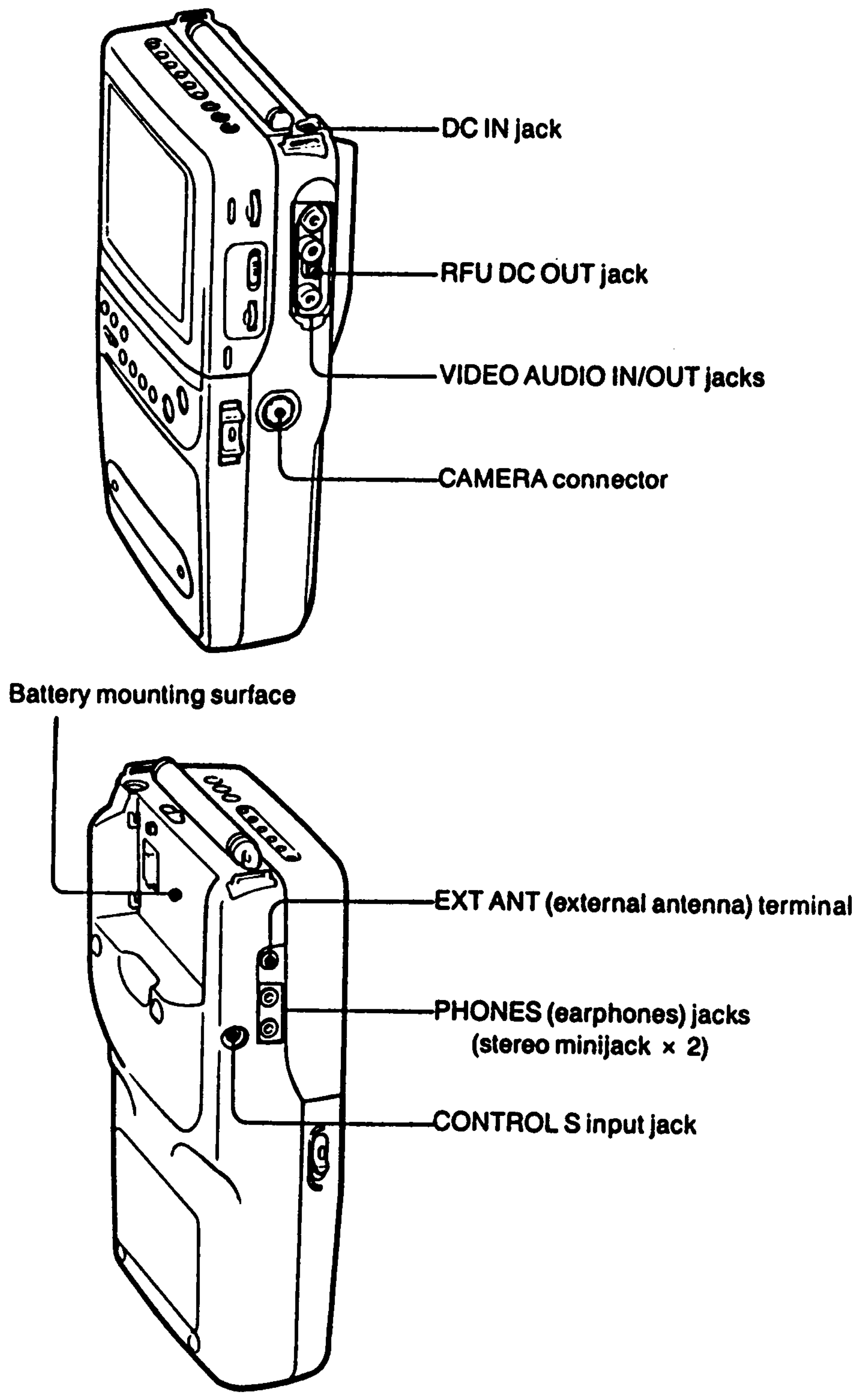
You can adjust the angle of the screen (max. 60°).

Parts used for VCR playback/recording

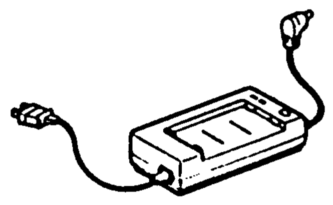
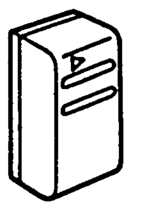
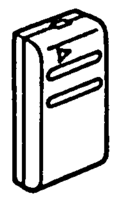
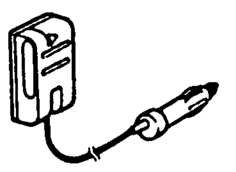
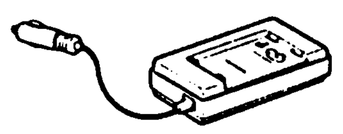

TIMER SET/CHECK button
+ button
NEXT button
TIMER REC (recording) ON/OFF button
SLEEP button
LCD ON/OFF button
COUNTER RESET button
DATA SCREEN button
INDEX MODE button
EJECT button
Indication lamps
TIMER REC (recording) lamp
STEREO lamp
POWER lamp
INDEX −/+ buttons
REC (recording) switch and lamp
POWER switch
Tape transport buttons
I▶ (slow) button
II (pause) button
◀◀ (rewind) button
▶▶ (fast-forward) button
▷ (play) button
☐ (stop) button
SLOW/STILL ADJUST ▲/▼ buttons
SP/LP recording time selector
INPUT SELECT button
INDEX MARK button
INDEX ERASE button
AUTO STEREO ON/OFF switch

Power Sources

Parts used for connection


DC IN jack
RFU DC OUT jack
VIDEO AUDIO IN/OUT jacks
CAMERA connector
Battery mounting surface
EXT ANT (external antenna) terminal
PHONES (earphones) jacks (stereo minijack × 2)
CONTROL S input jack

Selection of Power Sources

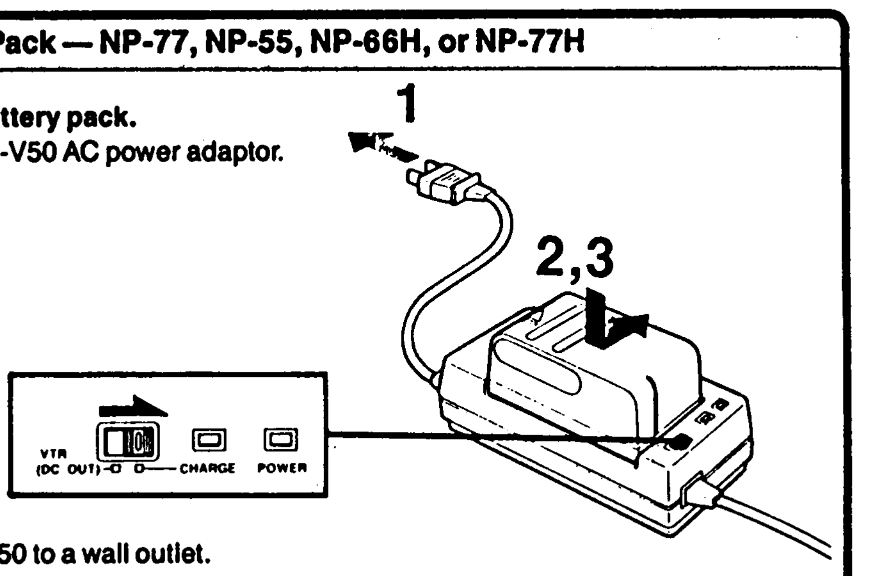
Place	Power sources	Page
Indoors	AC power adaptor AC-V50 (supplied) 	16
Outdoors	Battery pack NP-77 (supplied), NP-66H, or NP-77H  NP-55 	12
In the car	DC pack DCP-77  Car battery charger DC-V30 	17

The above accessories, except for the AC-V50 and NP-77, are not supplied.

Disconnecting the power source during recording or playback operations may damage the cassette tape. If this is done accidentally, supply the power again immediately and turn the power on.

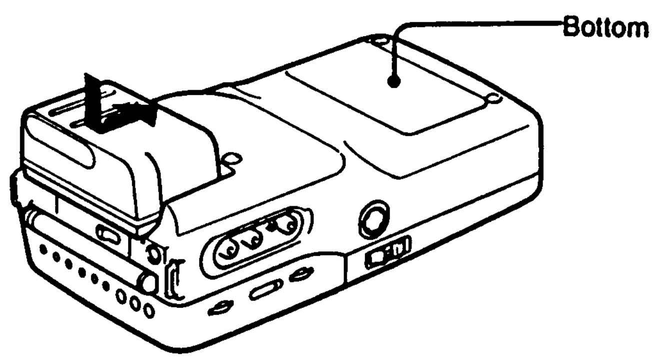
Using with Battery Pack — NP-77, NP-55, NP-66H, or NP-77H

1 First, charge the battery pack.
Use the supplied AC-V50 AC power adaptor.



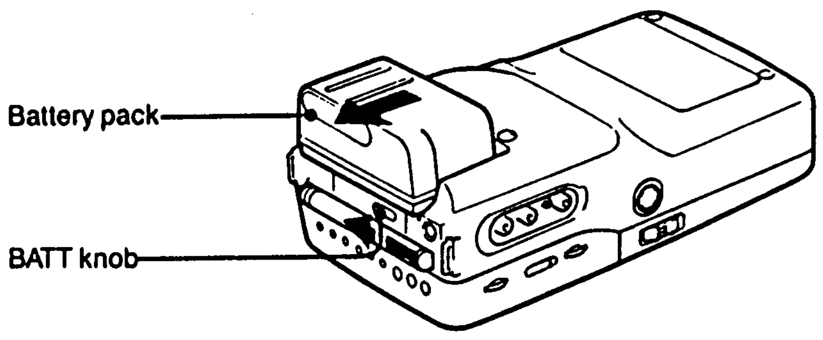
1 Connect the AC-V50 to a wall outlet.
2 Install the battery pack.
Align the right side of the battery pack with the line on the AC power adaptor.
3 While pressing the battery pack, slide it in the direction of the arrow.
The POWER lamp (green) and the CHARGE lamp (orange) on the AC-V50 lights up.
The charging begins.
When the charging is completed, the CHARGE lamp goes out.
Unplug the unit from the wall outlet and the POWER lamp goes out.

2 Attach the battery pack to the video TV recorder.
Align the battery pack with the white line on the video TV recorder, then while pressing, slide the battery pack in the direction of the arrow.



- The charging time is about 120 minutes for an NP-77, 140 minutes for NP-77H, 100 minutes for NP-66H, and 60 minutes for an NP-55.
- The unit cannot be operated with the AC power adaptor when it is used for charging a battery pack, and the battery pack cannot be charged when the AC power adaptor is used to operate the unit.
- An NP-77, NP-55, NP-66H, or NP-77H can also be charged with the BC-55 or BC-77 battery charger.

To remove the battery pack



While sliding the BATT knob in the direction of the arrow, slide the battery pack as illustrated.

Operating time

A fully-charged battery pack can operate this unit as follows:

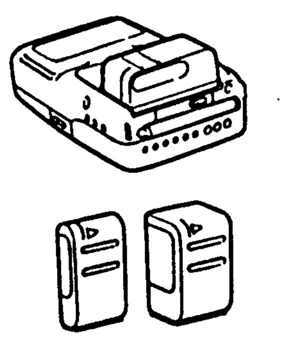
	LCD ON/OFF	NP-77H	NP-77	NP-66H	NP-55
Watching TV programs	ON	Approx. 125 min.	Approx. 100 min.	Approx. 90 min.	Approx. 50 min.
VCR playing back	ON	Approx. 120 min.	Approx. 100 min.	Approx. 90 min.	Approx. 50 min.
TV program recording	ON	Approx. 95 min.	Approx. 75 min.	Approx. 70 min.	Approx. 40 min.
TV program recording	OFF	Approx. 140 min.	Approx. 115 min.	Approx. 105 min.	Approx. 55 min.
Camera recording*	OFF	Approx. 100 min.	Approx. 80 min.	Approx. 75 min.	Approx. 40 min.

* When connecting the color video camera CCD-G1 (not supplied) and setting the LCD ON/OFF switch to OFF.

Using the Battery Pack Efficiently

How to prepare the rechargeable battery packs

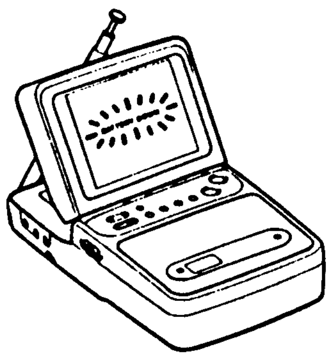
Have sufficient battery pack power to perform 2 or 3 times the amount of recording that you plan to do.
"Battery life" as indicated in the instruction manual or catalogue of the video TV recorder is measured by the continuous use of the video TV recorder, at room temperature, using a fully charged battery.
Fast winding or rewinding tape operations consumes much more battery power than normal tape transport operation. Consequently, battery life becomes shorter when these operations are performed frequently.



Battery life is shorter in a cold climate.
Cold climates reduce the efficiency of a battery and cause it to run out more quickly.

When to replace the rechargeable battery pack

When the battery pack is exhausted, the POWER lamp and the BATTERY DOWN indication on the screen starts blinking slowly about five minutes before the battery pack is discharged. Replace the battery when the blinking changes from slow to fast. However, during playback, the BATTERY DOWN indication starts blinking rapidly about a minute before the battery pack is discharged.
Turn off the power of the video TV recorder before replacing the battery. While replacing the battery, keep the cassette inside the cassette holder. When the battery has been replaced, recording can be resumed smoothly without any picture distortion.



Fast blinking

Notes on battery exhaustion when a camera is connected
When the battery is exhausted, the tally lamp (red) displayed in the viewfinder of the camera starts blinking, and the power goes off automatically. Replace the battery pack with a fully charged one when the blinking starts.

Notes on charging

Before using the battery pack, charge it sufficiently. A brand-new battery pack is not charged.
Recharge the battery pack when it is fully exhausted.
- If the operation is completed before the BATTERY DOWN indication on the screen or POWER lamp starts blinking, it is recommended that you discharge the battery pack by playing back a tape until BATTERY DOWN or POWER lamp starts blinking rapidly.
- Do not recharge the battery pack before it has been discharged completely. Repeated charging while some capacity remains will reduce the battery capacity. However, the original battery capacity can be recovered if you fully discharge and fully charge the battery pack again.

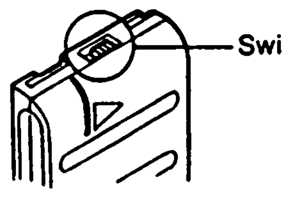
Keep the terminals clean

If the terminals (metal parts on the back) are soiled, the battery life will become shorter. When the terminals are soiled, or when the battery pack has not been used for a long time, repeatedly attach and remove it several times. This will improve the contact of the battery pack and the video TV recorder. Also, wipe the + and − terminals with a soft cloth or paper.

Notes on the rechargeable battery pack

Battery pack care
- Remove the battery pack from the video TV recorder after use, and keep it in a cool place. When the battery pack is installed on a video TV recorder, a small amount of current flows to the recorder even if the POWER switch is turned off. This causes overdischarge and, consequently, shortens the life of the battery.
- The battery pack is always discharging - even when it is not in use. Thus, the battery should be charged before each use.

How to use the switch on the battery pack
Use this switch as a reminder of the charging condition. Set the switch to the "no mark" position when the charging is completed. Set the switch to the "red mark" position when the battery has been discharged.



How many times can the battery pack be recharged
It can be fully charged and discharged about 500 times under normal temperatures. If the BATTERY DOWN indication blinks rapidly just after turning on the recorder, even though a fully charged battery pack has been installed, replace the battery pack with a brand new one.

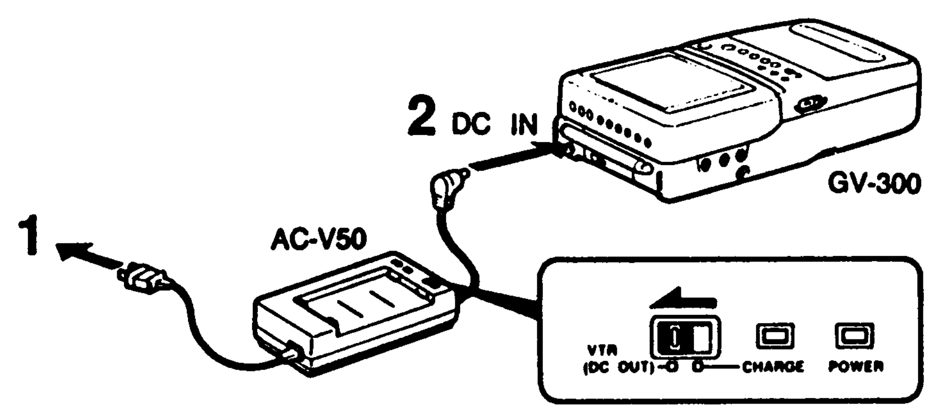
Charging temperature
Lower temperatures require a longer charging time.
Charging under a temperature ranging from 10°C to 30°C (50°F to 86°F) is recommended.

Why the battery pack heats up
While the battery pack is being charged or used, a chemical change occurs inside the battery pack which generates electric energy. Consequently, the battery pack becomes warm, but this is not dangerous.

Carrying the battery pack
If the + and − terminals are short-circuited with a piece of metal, the battery heat up abnormally. This is very dangerous. Never put an uncovered battery pack in a pocket together with a key holder or other metal object.

If the battery pack is not used for a long time (about 1 year)
Charge it again, but in this case the battery life will be shorter than normal. After several charging and discharging cycles, the battery life will recover its original capacity.

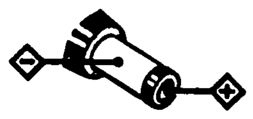
Using this unit with the AC Power Adaptor — AC-V50



1 Connect the AC power adaptor to a wall outlet.

2 Insert the DC plug of the adaptor to the DC input jack of the video TV recorder.

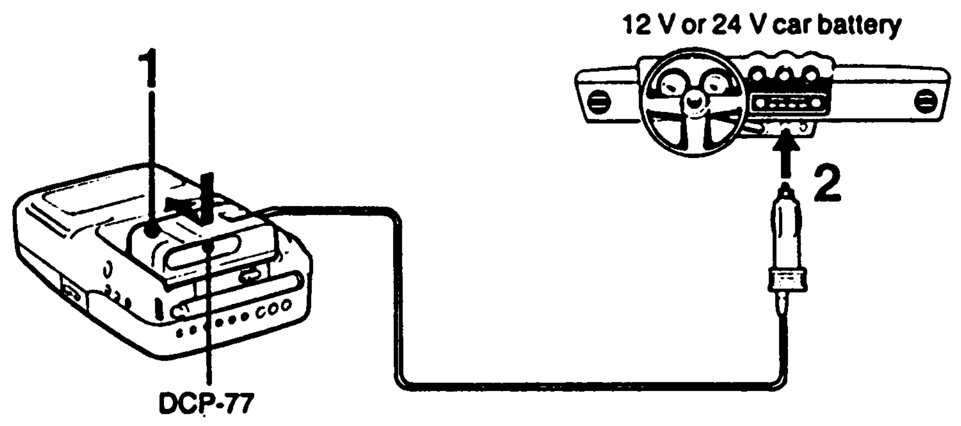
Note on the AC power adaptor
Use only the supplied AC-V50 AC power adaptor.
Do not use any other AC power adaptor.



Polarity of the plug

- The unit is not disconnected from the AC power source as long as it is connected to the wall outlet.
- One blade of the plug is wider than the other for the purpose of safety and will fit into the wall outlet only one way. If you are unable to insert the plug fully into the outlet, contact your dealer.
- While the unit is in use, particularly during charging, keep it away from AM receivers and video equipment because it will disturb AM reception and video operation.

Using This Unit with a Car Battery — DCP-77



1 Attach the DC pack to the video TV recorder.

2 Connect the plug to the cigarette lighter socket.

- Connect the DCP-77 only to a car with a negative ground car batteries of 12 V or 24 V.
- Attach or remove the DC pack in the same way as the battery pack.
- DCP-55 is not recommended for this unit because the capacity of the DCP-55 is not enough to operate it.

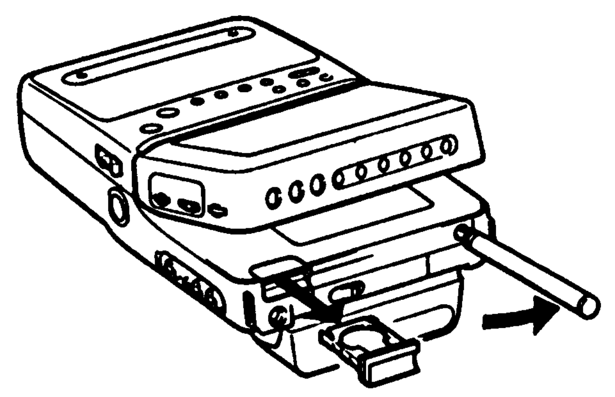
Notes
- Be careful not to let any metal object touch the metal projection on the battery pack. When the battery pack is not used, keep it in its case.
- Keep the video TV recorder away from the power source. If not, noise may appear on the screen.

Notes on using this unit in a car
- For your safety, do not watch the TV or operate the controls while driving.
- Avoid leaving the unit in a place with very high temperatures. If you do, it may cause distortion of the cabinet or malfunction of the unit.
- If you use this unit while your car is not in use, the car battery will be consumed. Avoid using this unit in such condition for more than 12 hours.

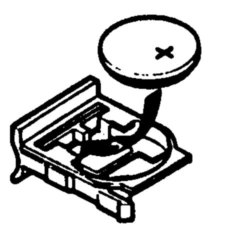
Setting the Clock

Before you set the clock, install a lithium battery. With a lithium battery installed, this unit powers the clock and keeps the last channel in memory when the power source is disconnected.

1 Pull out the lithium battery compartment.

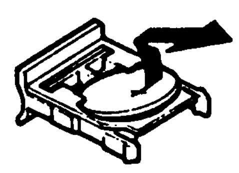


2 Install the supplied CR2032 lithium battery with the + side facing out.



3 Reinsert the compartment.

To remove the lithium battery
Press the battery upward and remove it as illustrated.



Lithium battery life

Approximately 1 year in normal operation.
If the lithium battery becomes weak, the AM 12:00 indication appears on the screen when the DATA SCREEN button is pressed. In this case, replace the battery with a Sony CR2032 lithium battery. Use of a battery other than a Sony CR2032 may present a risk of fire or explosion.
After replacing the battery, reset the clock.

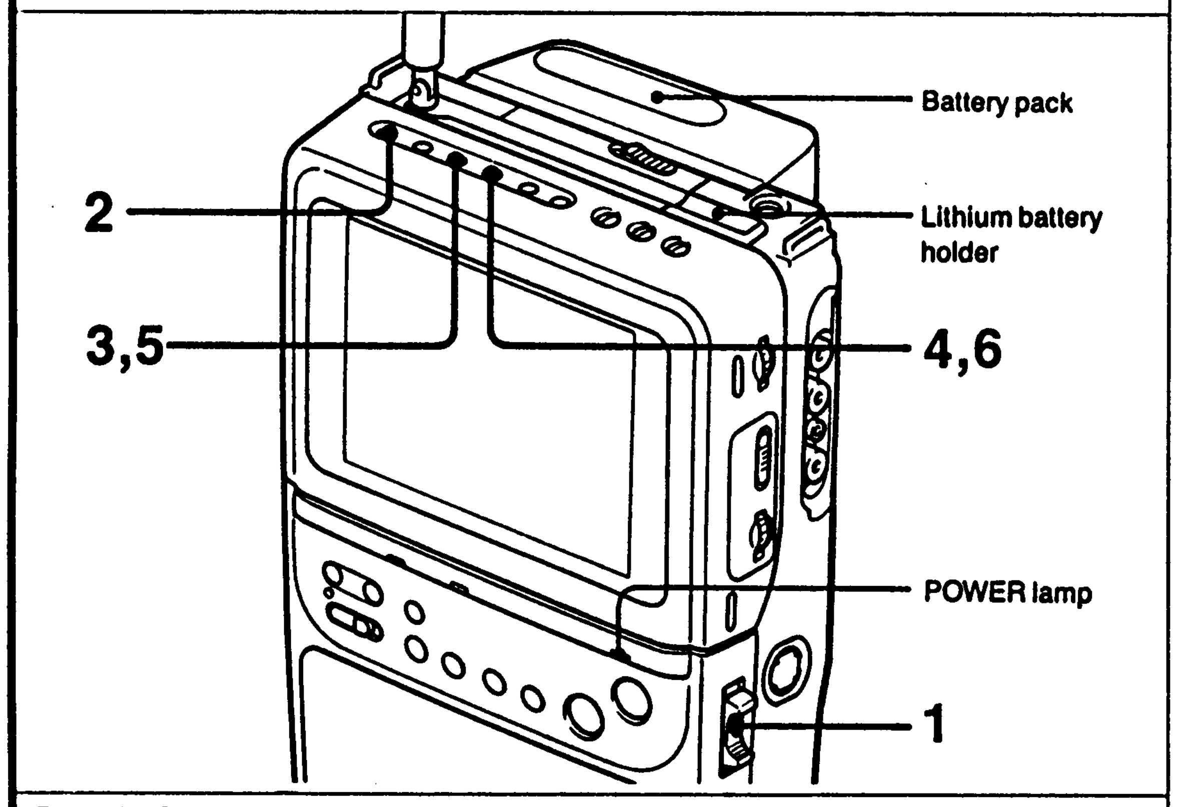
Notes on lithium battery
- Keep the lithium battery out of the reach of children.
  Should the battery be swallowed, consult a doctor immediately.
- Before use, wipe the battery with a dry cloth to assure a good contact.
- Be sure to observe the correct polarity when installing the battery.
- Do not hold the battery with metallic tweezers, otherwise a short-circuit may occur.
- Do not break up the battery or throw it into a fire because it may explode. Carefully dispose of the used batteries.

Warning
Battery may explode if mistreated. Do not recharge, disassemble or dispose of in fire.

Setting the Clock

Before setting

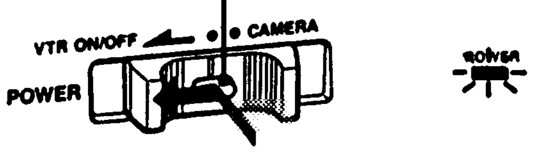
- Make sure that the power source is connected correctly.
- The time indication "PM 12:00" means noon, and "AM 12:00" means midnight.


Battery pack
2
Lithium battery holder
3,5
4,6
POWER lamp
1

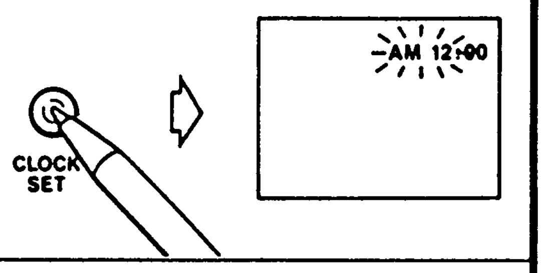
Example: Set to PM 1:15

1 **Turn the power on.**
The POWER lamp lights up.

While pressing the green button, slide the POWER switch to the left to turn the power on.

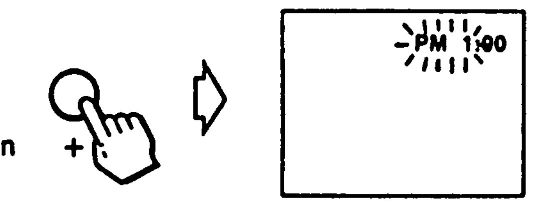

VTR ON/OFF
CAMERA
POWER
POWER

2 **Press the CLOCK SET button with a pen or similar object.**
The screen will enter the time setting mode.
The screen becomes dark.
The next item to be set blinks.

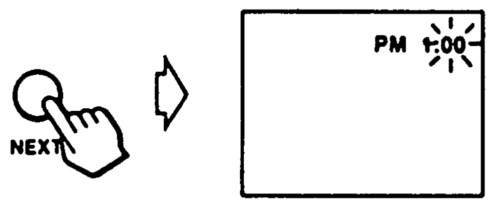

CLOCK SET
AM 12:00

3 **Set the hour.**
Press the + button repeatedly until you get the desired setting.

If you keep the button pressed, the indication will advance continuously.

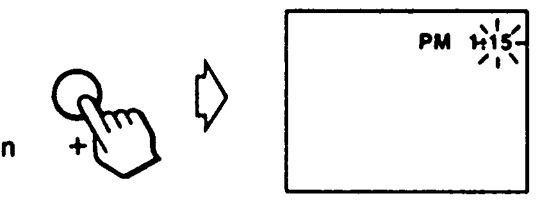


4 **Press the NEXT button.**

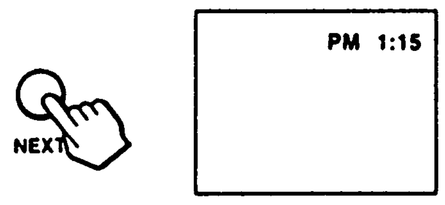


5 **Set the minute.**
Press repeatedly until you get the desired setting.

If you keep the button pressed, the indication will advance continuously.



6 **Press the NEXT button.**
The clock starts.
The screen goes back to the normal brightness.

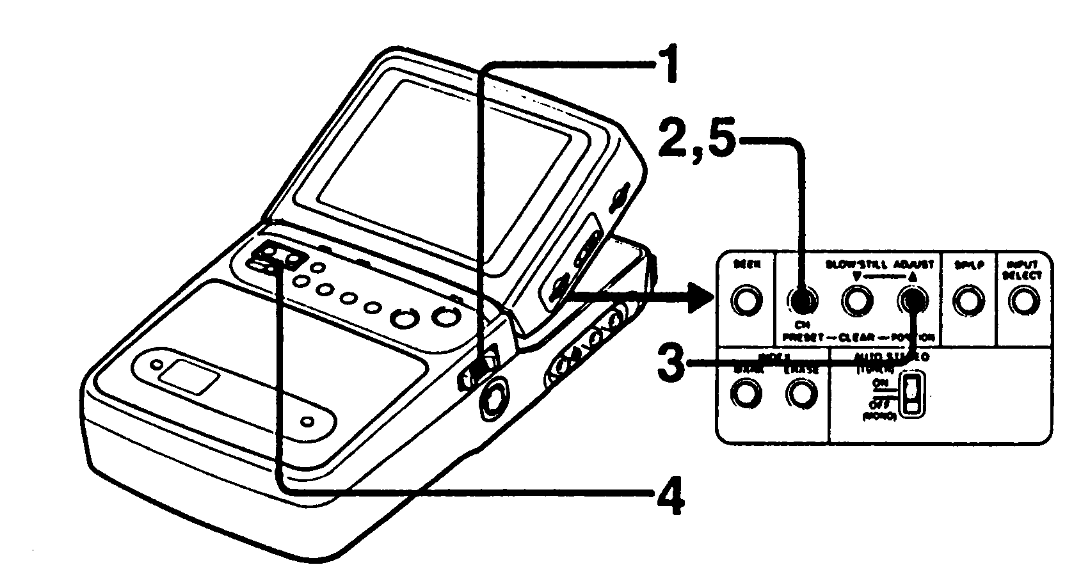


Note
If the lithium battery is not installed, the clock will go back to "AM 12:00" each time the power source is disconnected.

Presetting TV Channels

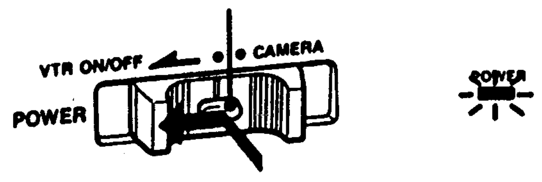
Your receiver is capable of receiving VHF channels 2-13, UHF channels 14-69 and cable TV channels 1 (A-8), 98 (A-2), 99 (A-1), 14-36 (A to W), 66-125 (W + 30 to W + 84). The channel numbers 1-99 will be displayed in the display window.
This unit is preset at the factory to receive certain channels
(see the chart on page 23.) If you want to receive other channels, you need to preset them.

To Preset New Channels


1
2,5
3
4
CH PRESET
CLEAR
POSITION
INPUT SELECT

1 **Turn the power on.**
The POWER lamp lights up.
If the TV program is not displayed, press the INPUT SELECT button

While pressing the green button, slide the POWER switch to the left.

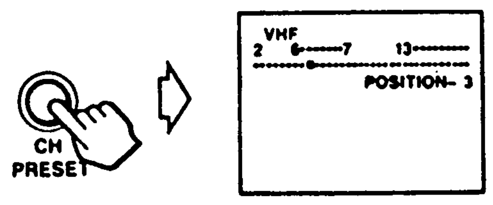

VTR ON/OFF
CAMERA
POWER
POWER

Preset channels

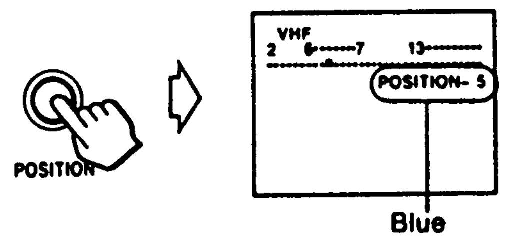
Program position	1	2-13	14-36	37-42	43	44-68	69	70-97	98	99
Corresponding channel	CATV 1	VHF 2-13	CATV 14-36	—	*	—	*	—	CATV 98	CATV 99
Number displayed	1	2-13	14-36	37-42	43	44-68	69	70-97	98	99

* UHF channels are preset around this number.

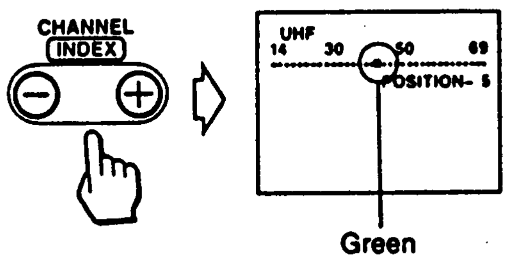
2 **Press the CH PRESET button.**


CH PRESET
VHF
2
7
13
POSITION- 3

3 **Press the POSITION button to select the desired program position where the channel is to be stored.**

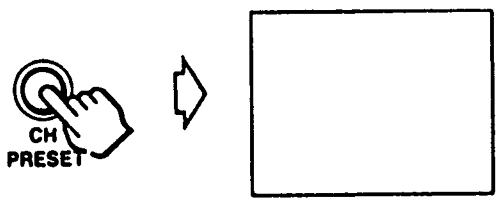

POSITION
VHF
2
7
13
POSITION- 5
Blue

4 **Press the CHANNEL −/+ buttons repeatedly to select the channel to be stored.**
The UHF channel range is displayed after the VHF range*.
Repeat steps 3 and 4 for other channels to be preset.


CHANNEL
INDEX
−
+
UHF
14
30
50
69
POSITION- 5
Green

5 **Press the CH PRESET button.**
Channel presetting is completed.

The on-screen display disappears.

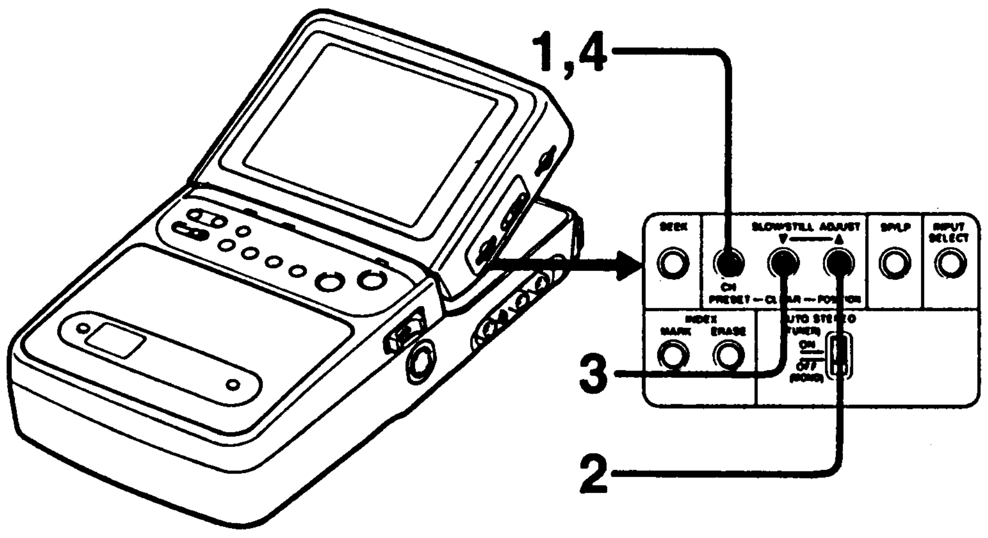


* After the channel range is displayed, wait for about 2 seconds before next operation.

To change the order of the channel to be stored
Follow the above steps.

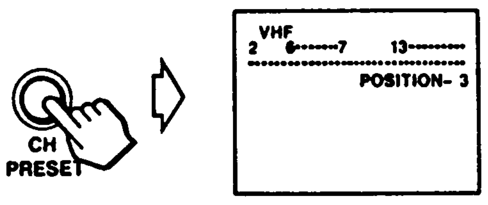
To Erase Channels

The erased program position is skipped when you press the CHANNEL +/– button.

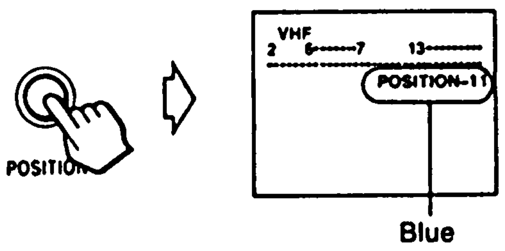

1,4
3
2
SEEK
SLOW/STILL ADJUST
SP/LP
INPUT SELECT
CH PRESET — CLEAR — POSITION
INDEX
MARK
ERASE
AUTO STEREO (TUNER)
ON
OFF (MONO)

Example: To erase program position 11

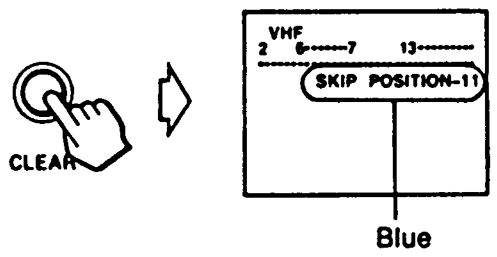
1 **Press the CH PRESET button.**


CH PRESET
VHF
2 6------7 13------
POSITION- 3

2 **Press the POSITION button and select the program position to be erased.**

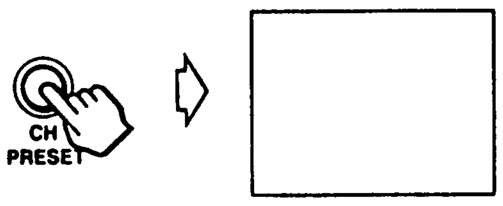

POSITION
VHF
2 6------7 13------
POSITION-11
Blue

3 **Press the CLEAR button.**
The SKIP indication appears.


CLEAR
VHF
2 6------7 13------
SKIP POSITION-11
Blue

Repeat steps 2 and 3 for other program position to be erased.

4 **Press the CH PRESET button.**
The on-screen display disappears.



To add the erased channels again
See "To Preset New Channels" on page 22.

Channel Allocation Chart

Frequency (MHz)	50	100	150	200	250	300	400	500	600	700	800
VHF/UHF channels	VHF 2-6			VHF 7-13				UHF14-69			
CATV channels	A-8~A-6	A-2~I			J~W			W+30~W+84			
Band indicator	VHF							UHF			

When the CHANNEL + button is pressed, the above channels will be scanned from the lowest frequency to the highest in sequence. By pressing the CHANNEL – button, the channels will be scanned in reverse.

Cable TV Channel Chart*

Cable TV systems use letters or numbers to designate channels. To tune in a channel, refer to this chart.

Number on this TV	1	98	99	14	15	16	17	18	19	20	21	22
Corresponding CATV channel	A-8	A-2	A-1	A	B	C	D	E	F	G	H	I

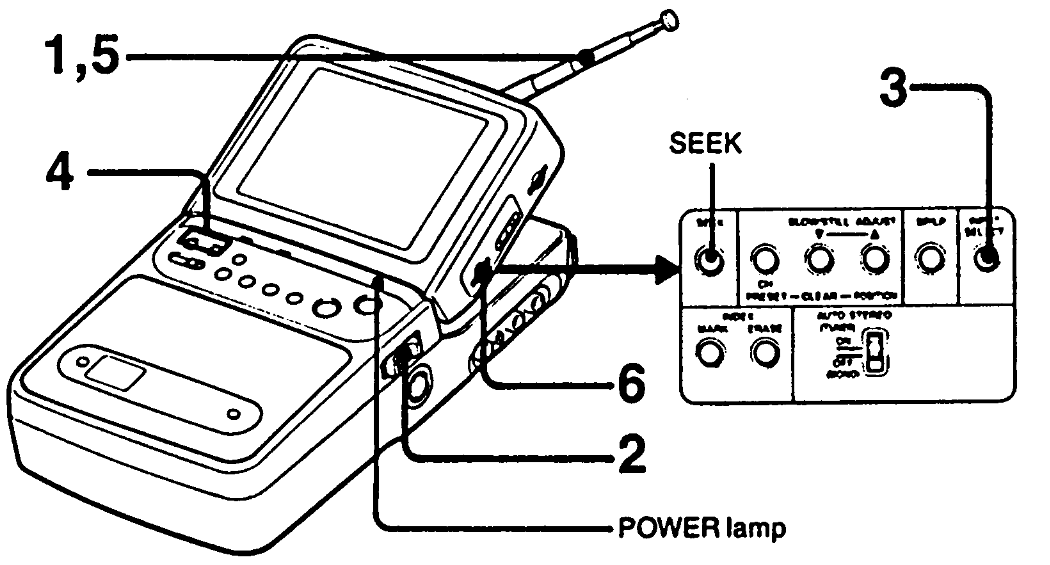
23	24	25	26	27	28	29	30	31	32	33	34	35	36	....
J	K	L	M	N	O	P	Q	R	S	T	U	V	W	W+30 ....W+84

Check with your local cable TV company for more complete information on the available channels.

* The designation of the cable TV channels conforms to the EIA/NCTA recommendation.

Note
Pay cable TV systems use scrambled or encoded signals and require special converters (decoders) besides the normal cable connections.

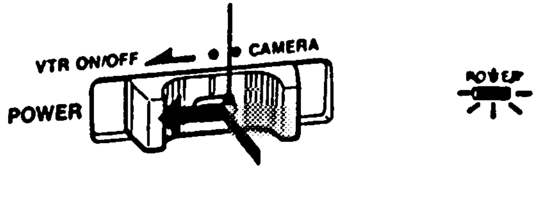
Watching TV Programs


1,5
4
3
SEEK
6
2
POWER lamp

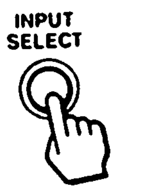
1 **Pull out the antenna fully.**
Be sure to pull at the base of the antenna.
If you have connected an external antenna or CATV cable, be sure to fold in the telescopic antenna.

2 **Turn the power on.**
The POWER lamp lights up.

While pressing the green button, slide the POWER switch to the left.


VTR ON/OFF
CAMERA
POWER
POWER

3 **If a TV program is not displayed, press the INPUT SELECT button.**

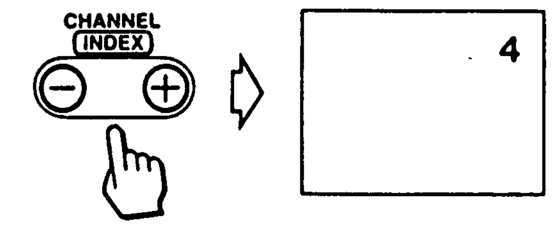

INPUT SELECT

The display will change as follows:

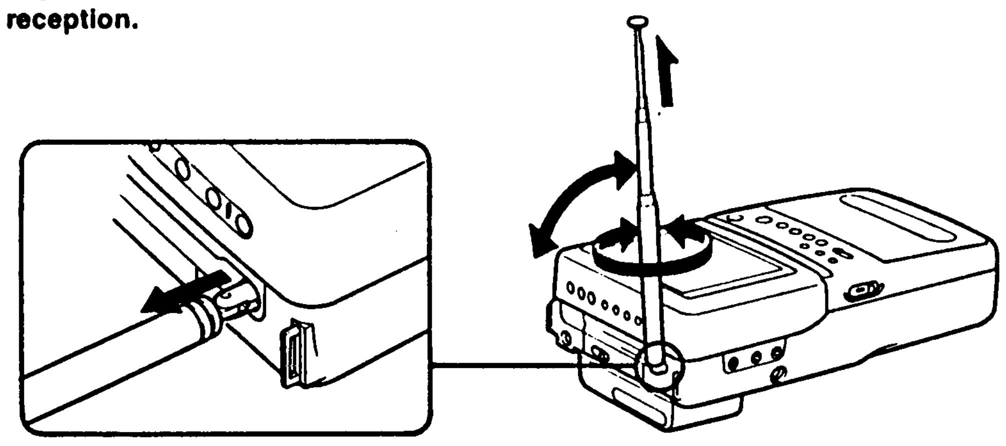
TV program → LINE
↑ ↓
CAMERA

⇩ To be Continued

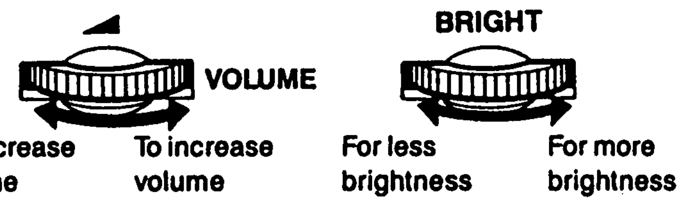
4 Select the desired channel.
Press + for higher-numbered channels and – for lower-numbered channels. The channels will appear in numerical sequence. Press CHANNEL +/– repeatedly until you get the desired channel on the screen.


CHANNEL
INDEX
4

5 Adjust the antenna for the best reception.

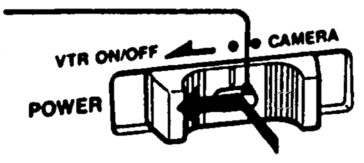


6 Adjust the volume and brightness.

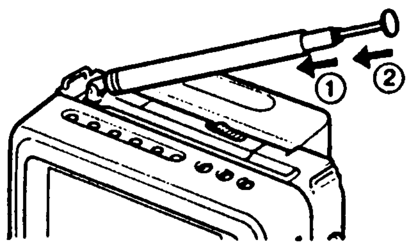

BRIGHT
VOLUME
To decrease volume
To increase volume
For less brightness
For more brightness

To turn off the TV

While pressing the green button, slide the POWER switch to the left. The POWER lamp goes out.


VTR ON/OFF
CAMERA
POWER

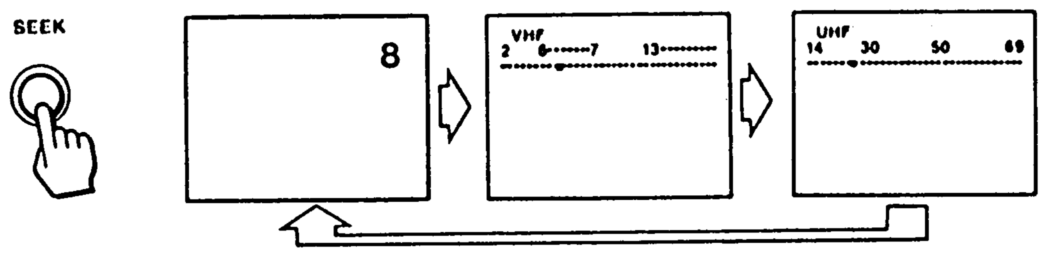
To put the antenna away
Slide in the base of the telescopic antenna first, then the center and the point.



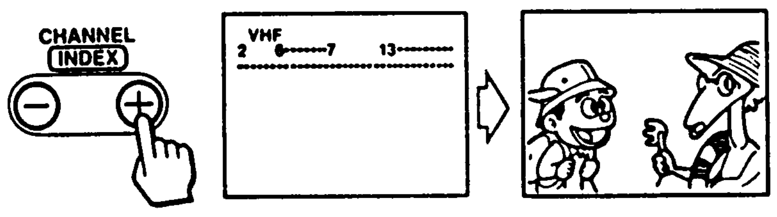
To View a TV Program Without Presetting Channels

When you do not know the channel number of the TV program you wish to view or if you want to use the unit in the moving car, search for the program as follows.

1 Press the SEEK button.
The channel range display appears.
For VHF channels, press once. For UHF channels, press twice.
To restore the normal display, press once more.


SEEK
8
VHF
2 7 13
UHF
14 30 50 69

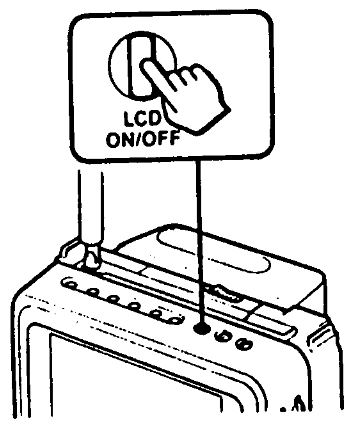
2 Press the CHANNEL +/– buttons to select the channel.


CHANNEL
INDEX
VHF
2 7 13

After selecting the channel, the channel range display goes out after a few seconds.

To mute (turn off) the picture

Press LCD ON/OFF button.
The screen will be muted.



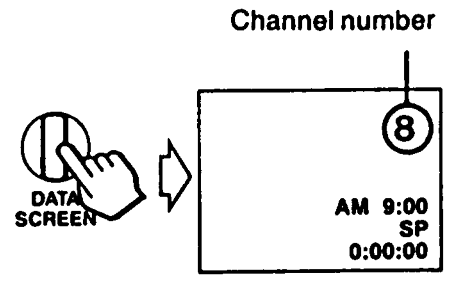
It is recommended to mute the picture when you view the playback picture with another TV or monitor. The picture noise of the TV or monitor is reduced. Battery life will also last longer if you use the unit with the picture turned off. To restore the picture on this unit, press LCD ON/OFF again.

Note
When no picture is displayed and the volume is low, or the earphones are connected, the unit appears to be turned off even though it is not. Be sure to turn off the unit with the POWER switch when it is not in use.

To display the channel number

Press the DATA SCREEN button.

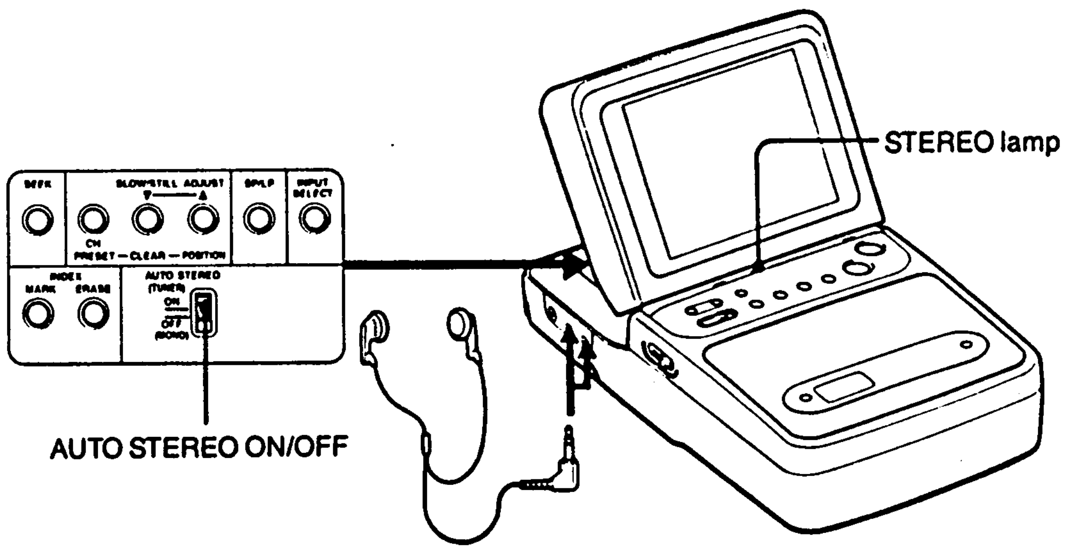
To make the on-screen display disappear, press the DATA SCREEN button again.
After the SEEK button is pressed, the VHF or UHF channel range is displayed instead of the channel number, then goes off after a few seconds.


Channel number
DATA SCREEN
8
AM 9:00
SP
0:00:00

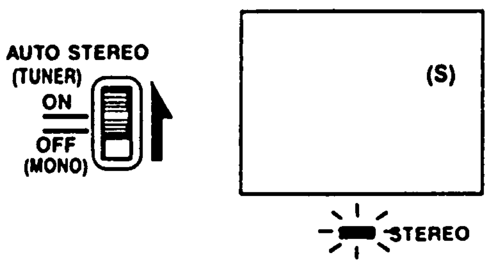
"Last channel" memory function
- While you are watching TV programs, if the power source is disconnected or the battery pack becomes exhausted, the unit turns off with the last channel being memorized.
  When you turn on the unit again, the last channel appears on the screen.
  The lithium battery must be installed for this function.
- The last channel memory function also works when the TV signal is cut off, for example, when you go through a tunnel in a moving car.
- If the lithium battery becomes exhausted but the power source is connected, the last channel memory function will still operate.

Listening to Stereo Programs

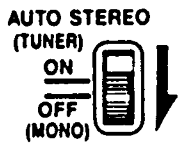
Connect the supplied stereo earphones to the PHONES jack to listen to the stereo sound. The speaker of this unit is monaural.


STEREO lamp
AUTO STEREO ON/OFF

Normally set the AUTO STEREO ON/OFF switch to ON.
The STEREO lamp lights up automatically whenever a stereo program is received.


AUTO STEREO (TUNER)
ON
OFF (MONO)
(S)
STEREO

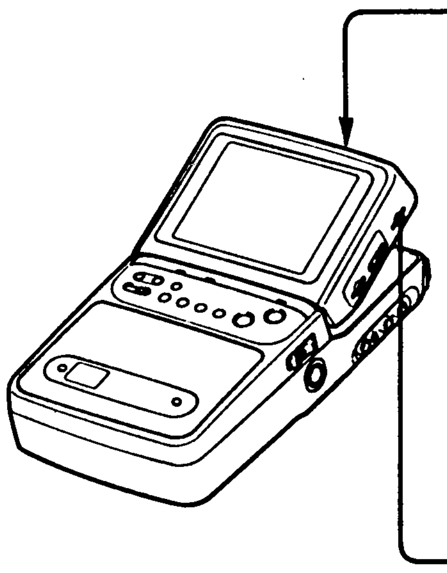
If excessive noise is heard when receiving a stereo program
Set the AUTO STEREO ON/OFF switch to OFF. The sound will be monaural, but the noise will be reduced. In this case, the STEREO lamp goes off. It is recommended to use monaural sound when using the unit in a moving car. To restore the stereo sound, set the switch to ON.

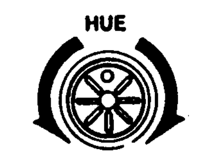

AUTO STEREO (TUNER)
ON
OFF (MONO)

Adjusting the Picture and Sound

Adjust the picture and sound to your preference.

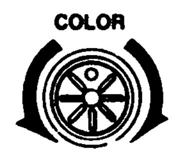
To adjust the picture





Adjust the skin tone. (Set to the center for standard level.)

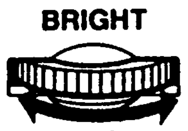
greenish tone · purplish tone



Adjust the color intensity. (Set to the center for standard level.)

more color intensity · less color intensity

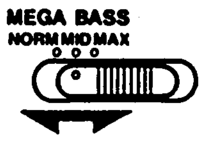
Adjust the brightness.



for less brightness · for more brightness

To listen to the dynamic bass sound

MEGA BASS function
Used for listening to the sound with the stereo headphone.



Set to NORM, MID, or MAX.

Using the SLEEP Timer

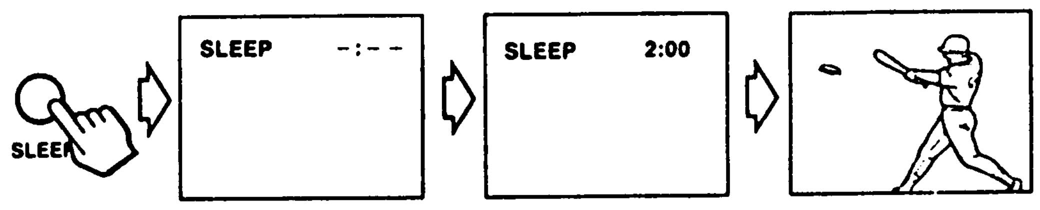
You can set the unit to turn off automatically after a certain amount of time, after as short as 30 minutes or as long as 5 hours, while viewing a TV program, video playback, or while recording.
Each time you press the SLEEP button, the display will change as follows:

-:-- → 0:30 → 1:00 → 1:30 → 2:00 → 2:30
↑ ↓
5:00 ← 4:30 ← 4:00 ← 3:30 ← 3:00

Example: To turn off the TV after 2 hours

1 Make sure the clock is set correctly (page 20).
No indication will appear on the screen if the clock is not set.

2 Select the desired time interval by pressing the SLEEP button.

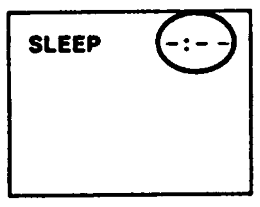


The screen becomes dark.
The normal display will be restored after a few seconds.

The TV will be turned off after 2 hours.
The procedure is the same for tape playback and recording. The tape will stop running after the selected time interval.

To cancel the SLEEP timer

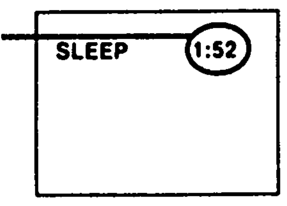
Press the SLEEP button repeatedly until the "-:--" display appears. The SLEEP timer can also be canceled by turning off the unit with the POWER switch.



To check the remaining time

Press SLEEP once.
The remaining time is displayed.
The indication will go off after a few seconds.

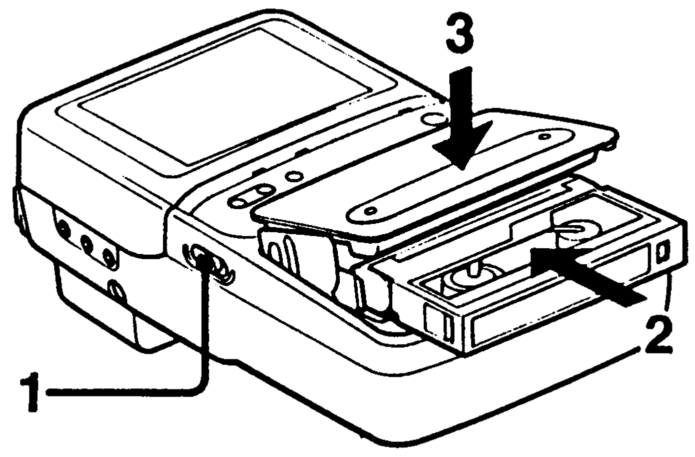
The unit will be turned off after about 1 hour and 52 minutes.



Note
When you use the unit with rechargeable batteries, the unit may turn off before the selected time because the batteries are exhausted.

Inserting a Cassette

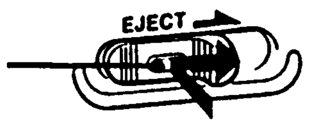
Make sure that the power source is connected to the unit.



To insert a cassette

1 Open the cassette holder with the EJECT button.

While pressing, slide the button to the right.



2 Insert the cassette with the window side facing up.

3 Close the cassette holder.

When you slide the EJECT button, power is supplied and the cassette holder opens even if the power is turned off. When the cassette holder opens, the power goes off automatically. Slide POWER if you want to continue operation.

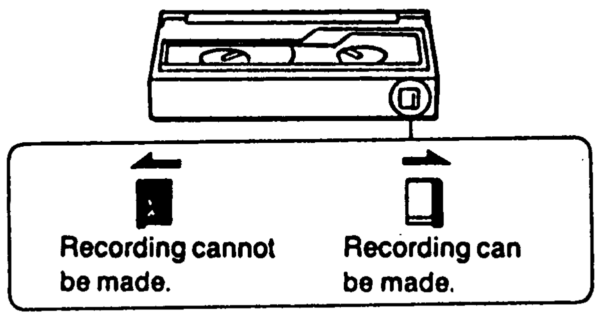
To eject a cassette

Slide the EJECT button. Make sure the tape is not running.

Note
Do not open the cassette holder while the unit is in the vertical position. If you do, the cassette may fall out of the holder and be damaged.

To Prevent Accidental Erasure

When a new recording is made on a previously recorded tape, the previous recording is automatically erased. To protect a recording, slide the red safety tab out to cover the opening.



Notes on opening and closing the cassette holder

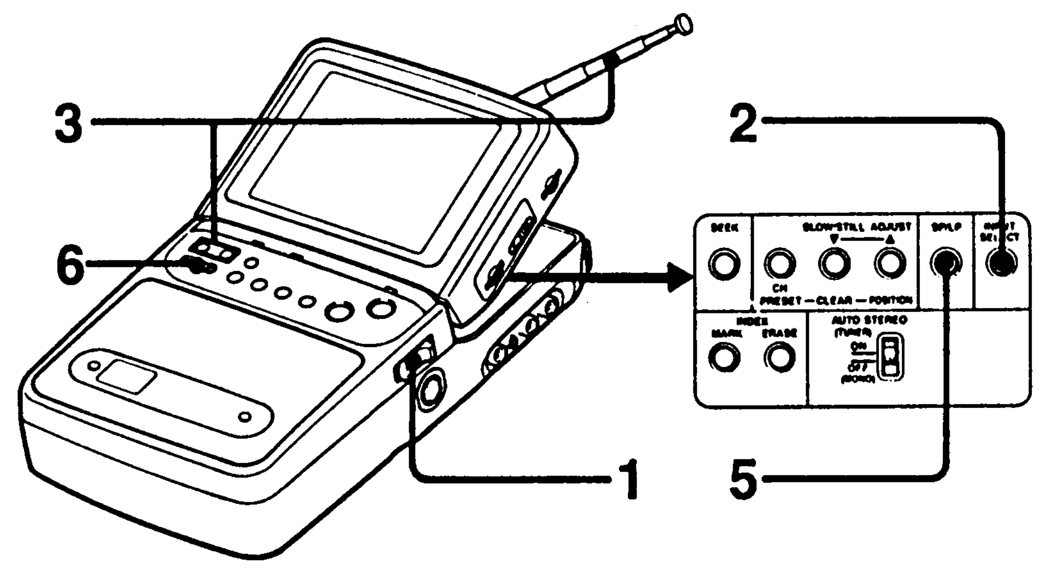
- Do not insert your finger into the cabinet when the cassette holder is open.
- Be careful not to get your finger caught in the cassette holder.

Notes on the cassette

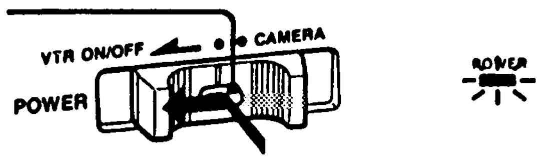
- Store cassettes in their cases when they are not being used and keep them in an upright position to prevent intrusion of dust and uneven winding.
- Always insert the cassette in the correct position.
- Never insert anything in the small holes on the rear of the cassette.
- Remove the cassette from the video TV recorder when not in use.

Recording TV Programs

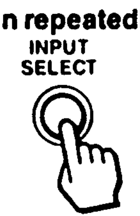
You can record a TV program while viewing it. For optimal picture and sound quality, connecting an external antenna is recommended. (See page 54.)



1 Turn the power on.
The POWER lamp lights up.
While pressing the green button, slide the POWER switch to the left.



2 If the TV program is not displayed, press INPUT SELECT button repeatedly until the TV program is displayed.
The display will change as follows:
TV program ——→ LINE
↑—— CAMERA ←┘



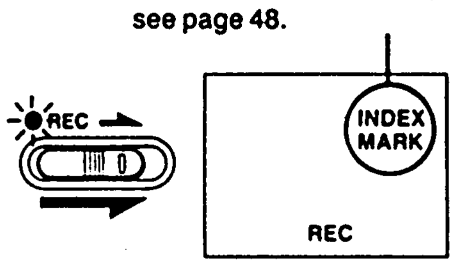
3 Select the desired TV channel. (See page 28.)
Adjust the telescopic antenna for the best reception. (See page 28.)

4 Insert the cassette. (See page 34.)

5 Select the recording mode, SP or LP.
The recording time of a cassette in the LP mode is twice as long as that in the SP mode. For better picture and sound quality, set to SP.

6 Slide the REC switch to the right.
Recording starts.

For this on-screen display, see page 48.



To stop recording for a moment
Press **II**.

To resume recording
Press **II** again.
(If the PAUSE button is not pressed again for about 5 minutes, the pause mode will be released automatically and the unit will stop. This is to protect the video heads and recording will stop.)

To stop recording
Press □.

When the tape is recorded to the end
The tape stops automatically, but the unit is not turned off. Turn the power off with the POWER switch.

About the recorded sound
The VOL control setting has no effect on the recording level.

Changing the channel during recording

Set the unit in the recording pause mode and then select another channel. You cannot watch another program while recording.

When recording from the beginning of a tape

Run the video TV recorder for about 15 seconds at the beginning of a cassette before recording. This will prevent missing the starting point or having any previously recorded pictures appear when playing back on another video cassette recorder.

When recording starts

The starting point is marked on the tape automatically and "INDEX MARK" is displayed on the screen. The index mark helps you to find the point where recording begins on a tape.

Recording/playback time

Two tape speeds can be selected with the SP/LP selector.
The recording time in the LP mode is twice as long as that in the SP mode. For better picture and sound, recording in the SP mode is recommended. During playback, the mode in which the tape was recorded is selected automatically.

Cassette and their recording time

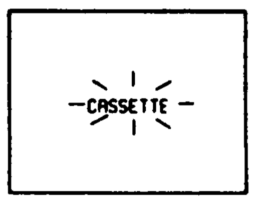
There are two formats for 8mm video recording, NTSC and PAL. Video cassette tapes are made to correspond to one of these formats. Use NTSC format cassette tapes for this unit. You will find "P6" on the package of NTSC cassettes.
In some countries, however, only PAL format cassette tapes with "P5" on the packages are available. If a PAL format cassette is used with this unit, the actual recording time may differ from the recording time indicated on the cassette.

Note
If you record with this unit on a tape that has been recorded in the PCM mode, and if you play back this tape on a VCR with PCM function, the sound may be cut off occasionally. In this case, set the audio monitor switch of the VCR to the standard position.

To stop recording automatically after a certain time — Quick timer

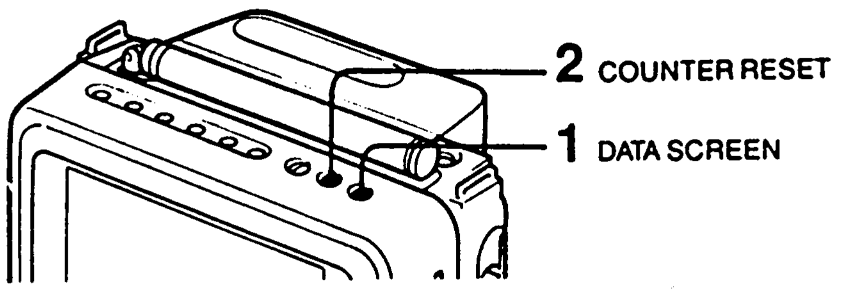
Press the SLEEP button during recording. You can leave the unit function when you go to bed or when you go out, etc.
The unit will be turned off automatically at the preset time. For operation, see page 33.

Are you having trouble?

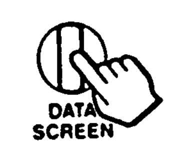
Symptom		Possible cause	Correction
"CASSETTE" indication is displayed when you slide the REC switch.	 CASSETTE	The safety tab on the cassette is slid out.	Slide the tab in or use a new cassette.
		The tape is at its end.	Rewind the tape or use a new cassette.
		No cassette is inserted.	Insert a cassette.

Using the Tape Counter

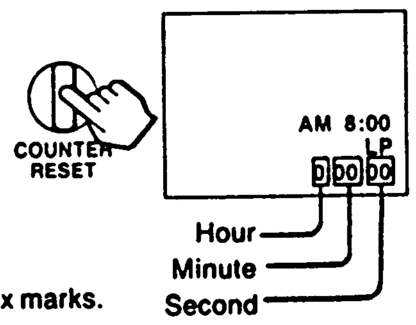
During recording or playback, the digits on the counter indicate the actual recording or playback time.
By noting the counter reading at a particular point, you can easily find that point later by referring to the tape counter.



1 Press DATA SCREEN so that the counter is displayed.



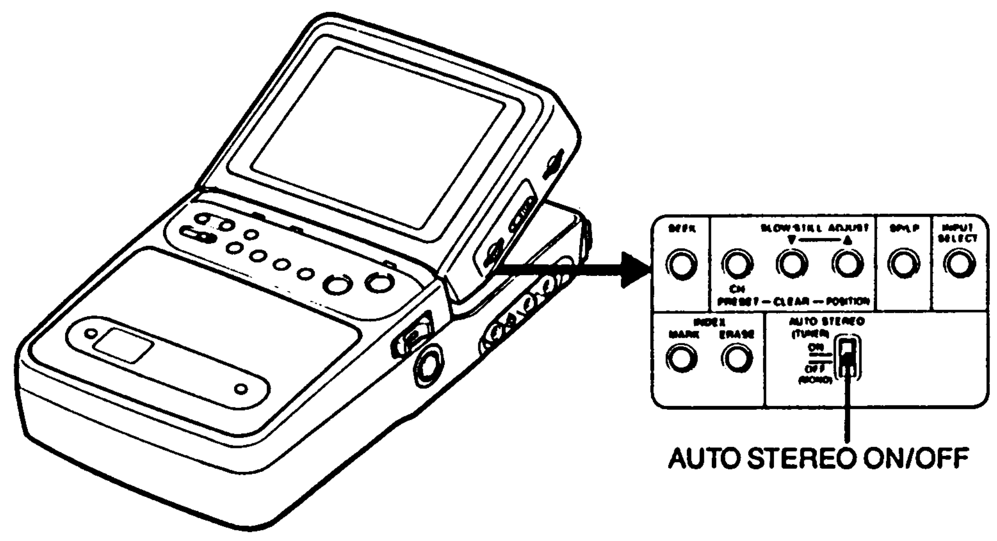
2 During recording or playback, press COUNTER RESET at the point you later want to locate.
The counter will be set to 0:00:00.



Use the counter to find this point later.
For your convenience, use both the counter and the index marks.

Notes
- The counter reading and the point on the tape may not correspond exactly. Use the counter as a guide.
- There will be a time lag of several seconds on the counter reading after repeated fast-forward and rewind operations.
- There will also be a time lag of several seconds when a tape recorded in both the LP or SP modes or a tape having a blank portion between the recorded portions is played back.

Recording Stereo Programs


SLOW/STILL ADJUST
INPUT SELECT
PRESET — CLEAR — POSITION
INDEX
MARK
ERASE
AUTO STEREO (TUNER)
ON
OFF (MONO)
AUTO STEREO ON/OFF

Set the AUTO STEREO ON/OFF switch to ON.

AUTO STEREO
(TUNER)
ON
OFF
(MONO)

A stereo program is recorded in stereo automatically.
A monaural program is recorded in monaural.

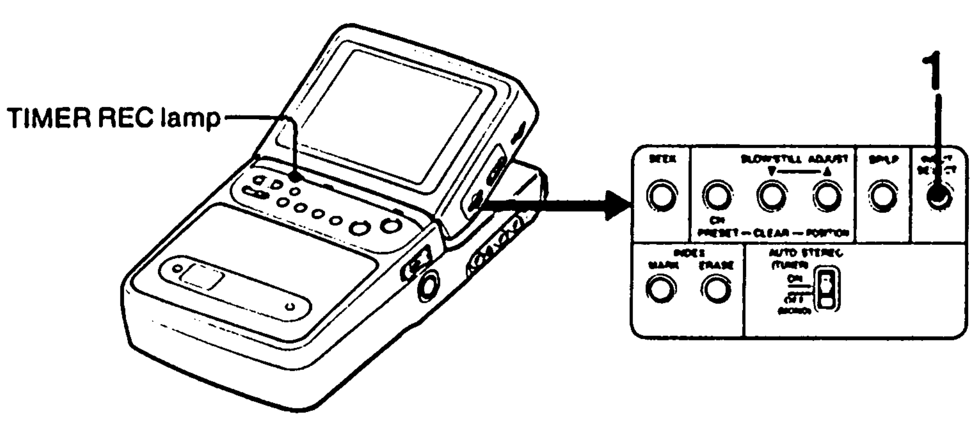
Using the Timer-Activated Recording Feature

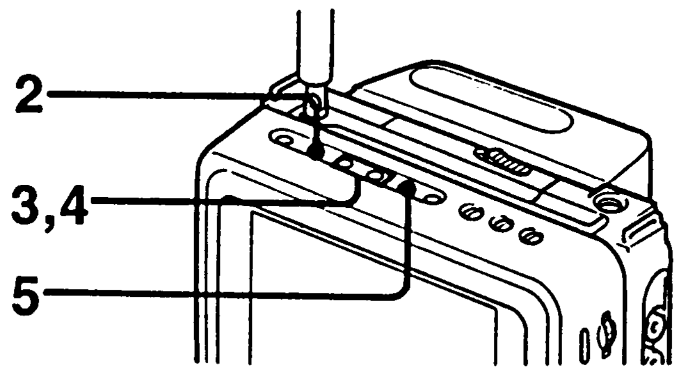
By using the timer-activated recording feature, you can program this unit to automatically record a TV program that will be shown within 24 hours of activating the timer. For better recording of picture and sound, use of an external antenna is recommended. See page 54.

Before setting the timer

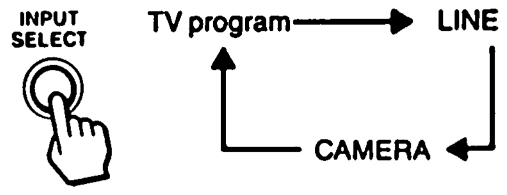
- Make sure that the power is supplied. (Is the battery pack fully charged? For long recording, use of the AC power source is recommended.)
- Set the clock (see page 20.)
- Insert a cassette (see page 34.) Make sure that the safety tab is slid in.
- Select the recording mode, SP or LP. For better quality picture, set to SP.
- If recording a stereo program, set the AUTO STEREO ON/OFF switch to ON.

Example: To record the program from 8:30 pm to 9:45 pm.


TIMER REC lamp
1

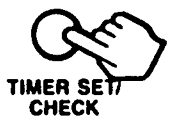


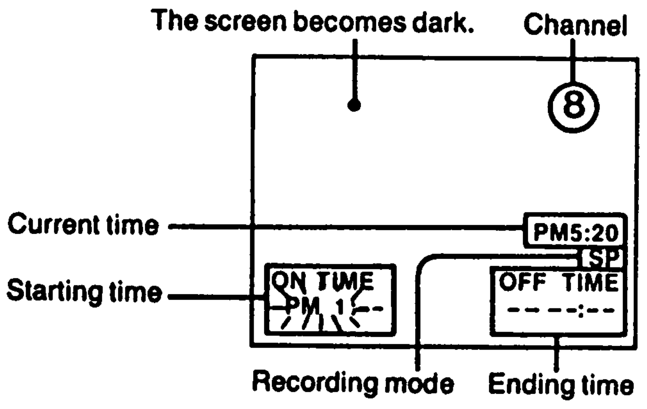
1 **Press the INPUT SELECT button repeatedly to select the recording source.**
For TV program recording, select the desired channel.
The input source will be changed as follows:


INPUT SELECT
TV program
LINE
CAMERA

⇩ To be Continued

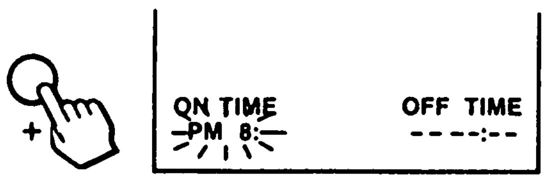
2 **Press the TIMER SET/CHECK button.**


TIMER SET/CHECK

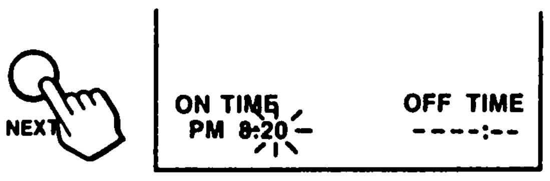

The screen becomes dark.
Channel
8
Current time
PM5:20
SP
Starting time
ON TIME
PM 1:--
OFF TIME
--- -:--
Recording mode
Ending time

3 **Set the time for the recording to begin.**

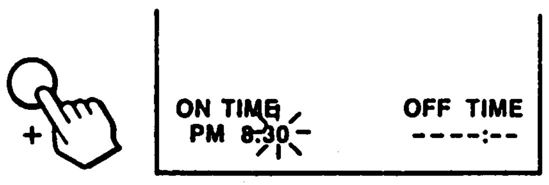
1) Press the + button to set the hour. Each time you press the + button, the hour indication increases by one. If you keep the button pressed, the indication will increase continuously.


+
ON TIME
PM 8:
OFF TIME
----:--

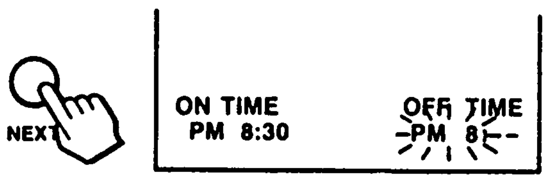
2) Press the NEXT button.


NEXT
ON TIME
PM 8:20
OFF TIME
----:--

3) Press the + button to set the minutes. Each time you press the + button, the minutes indication increases by one. If you keep the button pressed, the indication will increase continuously.

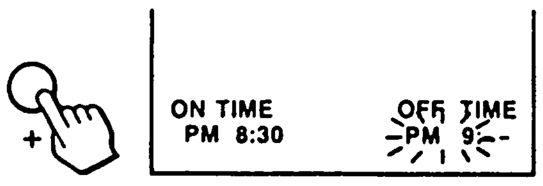

+
ON TIME
PM 8:30
OFF TIME
----:--

4) Press the NEXT button.
The starting time is now set.

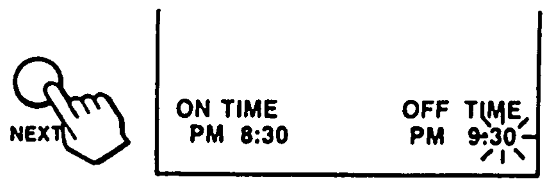

NEXT
ON TIME
PM 8:30
OFF TIME
PM 8:--

4 **Set the time for the recording to stop.**

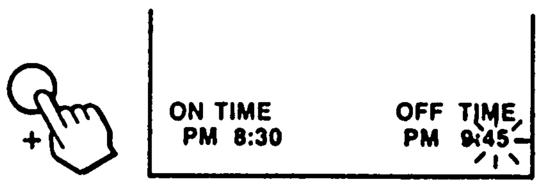
1) Set the hour with the + button.


+
ON TIME
PM 8:30
OFF TIME
PM 9:--

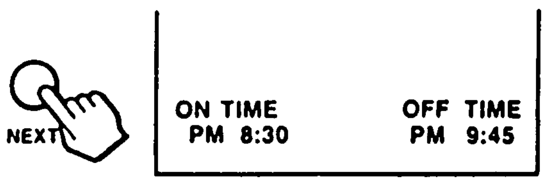
2) Press the NEXT button.


NEXT
ON TIME
PM 8:30
OFF TIME
PM 9:30

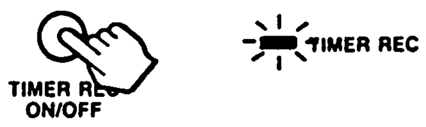
3) Set the minute with the + button.


+
ON TIME
PM 8:30
OFF TIME
PM 9:45

4) Press the NEXT button.
The ending time is now set. The on-screen display disappears.


NEXT
ON TIME
PM 8:30
OFF TIME
PM 9:45

5 **Press the TIMER REC ON/OFF button.**
The power goes off and the TIMER REC lamp lights up (timer recording standby mode). The recording starts automatically at the preset start time and the power goes off at the preset end time.


TIMER REC ON/OFF
TIMER REC

Notes

- During timer recording, both picture and sound will be muted. To listen to the sound and watch the picture, press the LCD ON/OFF button.
- When you press the TIMER REC button, the "CASSETTE" indication will appear if the safety tab on the cassette is slid out or if no cassette is inserted.

To stop the timer recording

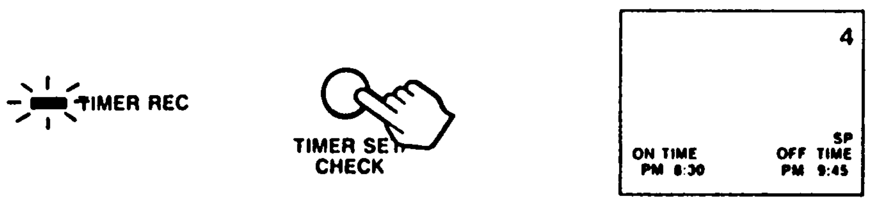
Press the TIMER REC ON/OFF button again.
The TIMER REC lamp goes out.

To correct the timer setting before completing the setting

Turn the power off, then on again.
Repeat steps from 1 to 5.

To check the setting

Press the TIMER SET/CHECK button while the TIMER REC lamp is lit.
The power is turned on and the starting and ending time is displayed for a few seconds.



To change the timer setting after completing the setting

Press the TIMER REC ON/OFF button to cancel the timer recording mode, then turn the unit on and set the timer again.

To set the timer while the tape is running

Only the starting and ending time can be set during playback or recording. After stopping the tape, set the recording mode (SP/LP) and channel, and then press the TIMER REC ON/OFF button.

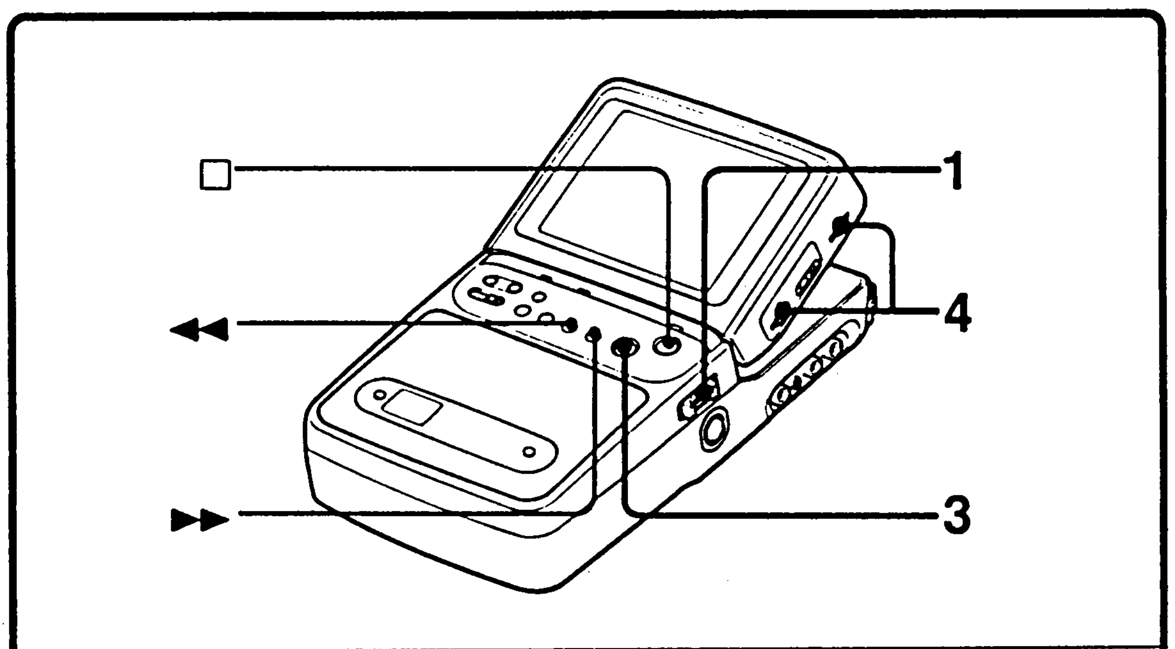
If a power interruption occurs when the unit is connected to the AC power source

Recording stops. Recording starts again after the power is resupplied. When a power interruption occurs during the timer recording standby mode and the power is resupplied, the timer settings will not be affected as long as the lithium battery is installed.

To record to the end of the tape

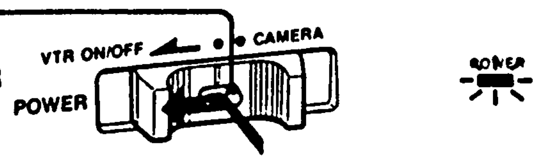
Set the starting and ending time the same. When the tape reaches the end, recording will stop and the power goes off.

Playing Back the Recorded Tapes



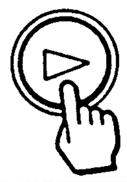
1 **Turn the power on.**
The POWER lamp lights up.

While pressing the green button, slide the POWER switch to the left.

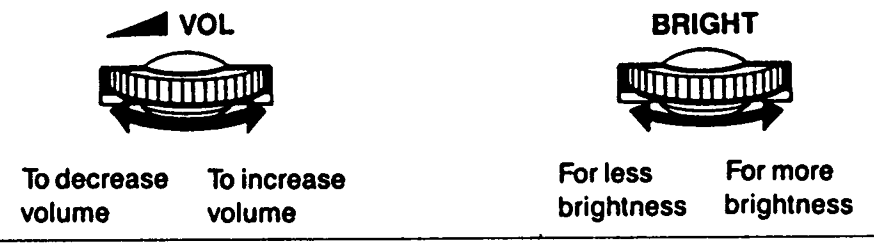


2 **Insert a recorded tape (see page 34.)**

3 **Press ▷ to start playback.**



4 **Adjust the volume and the brightness.**



To stop playback Press the □ button.
To rewind the tape Press the ◀◀ button.
To advance the tape Press the ▶▶ button.

To rewind the tape and play it back automatically — Auto play

While pressing the ◀◀ button, press the ▷ button.
The "AUTO PLAY" indication appears.

To mute the picture

Press the LCD ON/OFF button. To restore the picture, press the LCD ON/OFF button again.

To adjust the picture

Adjust the BRIGHT, COLOR, and HUE controls (see page 32.)

To stop playback at the desired time

Use the SLEEP function.
The unit goes off at the preset time. (see page 33.)

When a tape recorded in stereo mode is played back

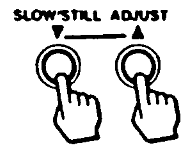
The "(S)" indication appears and the STEREO lamp lights up.
To listen to the stereo sound, use the stereo earphones.

Various Playback Modes — CRYSTAL-CLEAR still/slow/picture search on LCD

To stop the tape for a moment — Still picture	During playback	⏸	STILL	To resume normal playback, press ▷. These modes will be automatically released and playback will resume after the following time intervals: Still: 5 minutes Slow *: 1 minutes.
To view the slow playback picture	During playback	▶	SLOW 1/5	
To locate a particular point while viewing the picture — Picture search	During playback	◀◀ ⊖	(◀◀)	When you release the button, the unit will return to the previous mode.
	During playback	⊖ ▶▶	(▶▶)	
To view the picture at high speed — FR picture search	While rewinding	◀◀ ⊖	(◀◀)	
	While fast forwarding	⊖ ▶▶	(▶▶)	

* After normal playback is resumed, the I▶ button will not function for about 5 seconds.

If streaks appear in the still and slow playback mode



Adjust the picture as follows:
1 **Play back the slow motion picture.**
2 **Press the SLOW/STILL ADJUST ▼, ▲ buttons to adjust the picture so that the noise does not appear.**

To adjust the upper portion of the picture, press the ▲ button. To adjust the lower portion of the picture, press the ▼ button. The still picture is adjusted at the same time.

When the playback picture is viewed on another TV or monitor

The horizontal bands appear in the still, slow, picture search and FR picture search modes. Noise appears in the still and slow modes. To reduce the horizontal bands, press LCD ON/OFF button to mute the picture of this unit.

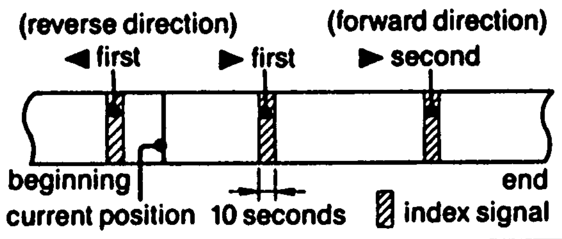
Notes on the CRYSTAL-CLEAR still/slow/picture search on LCD
Noiseless pictures can be viewed in the still, slow and picture search modes, owing to the characteristics of the liquid crystal.

Using Indexes — to Find the Desired Scene Quickly

An index can be recorded on the tape. Using the index, you can find the desired scene quickly. There are two kinds of indexes as follows:

A Conventional index

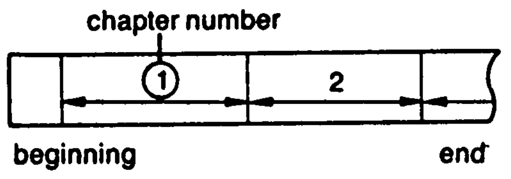
An index on your video tape which you can enter and erase during recording or playback operation. You can find the desired scene by designating the location of the desired index. (e.g. second index in the forward direction, etc.)



(reverse direction)
(forward direction)
◀ first
▶ first
▶ second
beginning
end
current position
10 seconds
▨ index signal

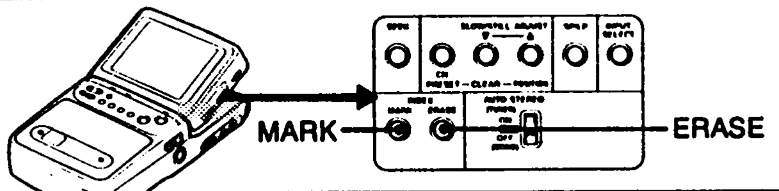
B Prerecorded index for software

An index that is already recorded on the commercially available video software. The indexes are already recorded, and you cannot enter or erase them. Each index has the chapter number so you can search the desired part by designating the number.



chapter number
①
2
beginning
end

To Enter an Index on a Tape



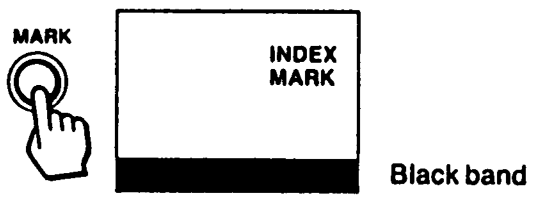
To enter an index during recording

When you start recording with the REC switch or when timer-recording is started, the index signal is automatically recorded for a few seconds*. (Indexes are not recorded when recording with a camera.)

To enter an index during the recording or recording pause mode, press the MARK button. The index signal is recorded for a few seconds*. When the MARK button is pressed during the recording pause mode, the index signal is recorded after you start recording again.

To enter an index during playback

During the playback or playback pause mode, press the MARK button.



MARK
INDEX
MARK
Black band

The index signal is recorded for a few seconds*. A black band appears on the screen, but is not recorded. In this case, no sound is heard. When the MARK button is pressed during the playback pause mode, the index signal is recorded after you resume the playback operation.

* For SP mode: about 10 seconds
For LP mode: about 18 seconds

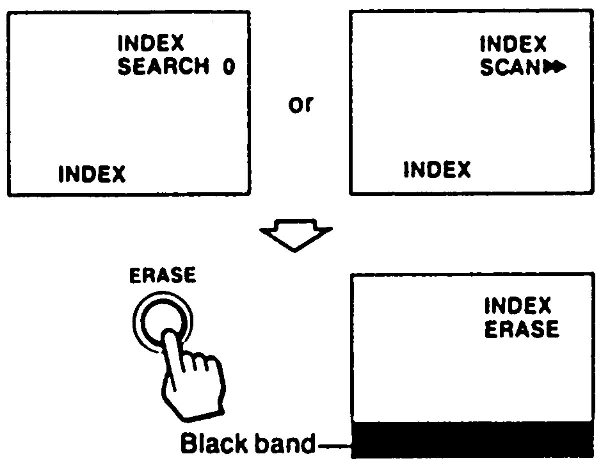
Note
Leave at least two minutes between each index. If an interval is too short, you may not be able to find or scan indexes correctly.

To Erase an Index

1 Search for the index to be erased.(See page 50, 52).

2 Press the ERASE button.
After playback starts, press the button while the following indications on the screen.

When you press the ERASE button, the tape is rewound to the beginning of the index signal, then the index signal is erased. On the screen, the indication "INDEX ERASE" and the black band appear.



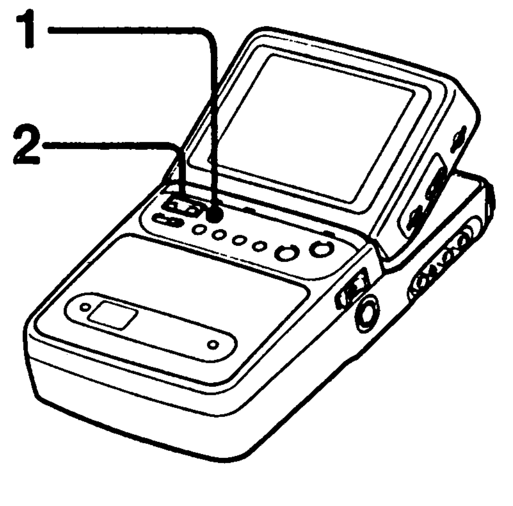
INDEX
SEARCH 0
INDEX
or
INDEX
SCAN▶▶
INDEX
ERASE
INDEX
ERASE
Black band

Note
Do not press any of the tape transport buttons while entering/erasing an index. If it is done, entering/erasing will not be completed.

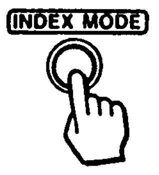
Notes on the index signal
- You cannot enter an index signal on a commercially available video software or on a cassette whose safety tab is slid out.
- You cannot erase an index signal which is prerecorded on a commercially available video software.
- The index signal cannot be erased in the following cases:
  - — When the index signal is recorded on a video camera recorder or other VCRs, and you wish to erase it on this unit.
  - — When the index signal is recorded on this unit, and you wish to erase it on a video camera recorder or other VCRs.
- To erase the index signal completely, use the equipment you used to enter the index signal.

To Find a Desired Index — Index Search

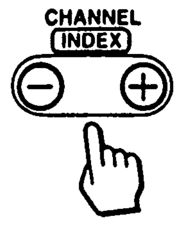
When you know the location or chapter number of the desired index, you can designate a number to find the desired part of the tape.



1 Press the INDEX MODE button once during playback or the playback pause mode.
The unit enters the index standby mode.



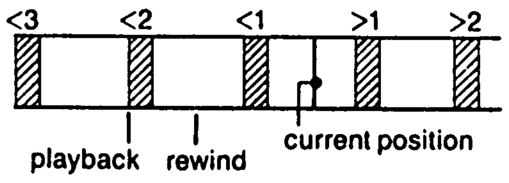
2 Press INDEX –/+ button repeatedly until the desired index number appears on the screen.
The tape is rewound or fast forwarded to the designated index number position, then playback starts.



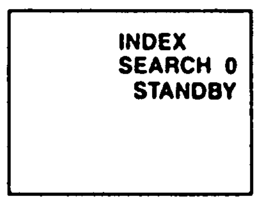
CHANNEL
INDEX

A Conventional index

Example: designating the second index in the reverse direction

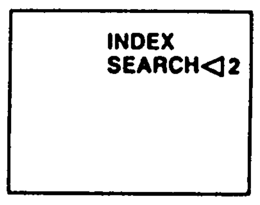


<3
<2
<1
>1
>2
playback
rewind
current position

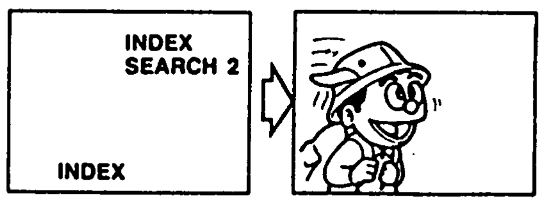


INDEX
SEARCH 0
STANDBY

Determine the number of indexes between the current position and the desired index. Select the appropriate number.
Press + for ▷ (forward) direction, – for ◁ (reverse) direction.



INDEX
SEARCH◁2

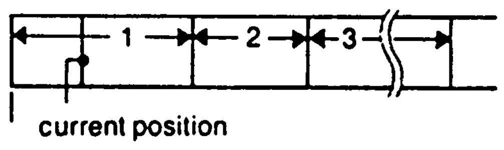


INDEX
SEARCH 2
INDEX

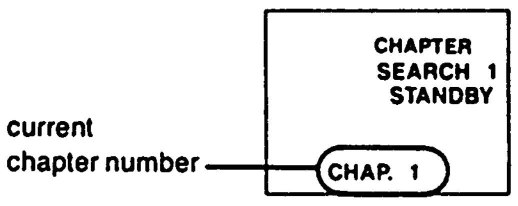
When playback starts, the indication will disappear after about 10 seconds.

B Prerecorded index for software

Example: designating chapter number 7

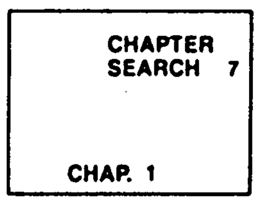


1
2
3
current position

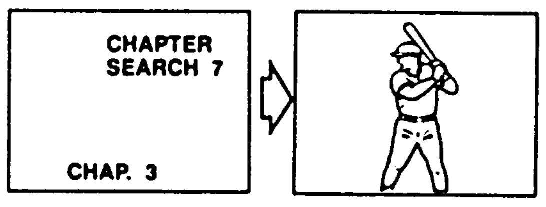


CHAPTER
SEARCH 1
STANDBY
current
chapter number
CHAP. 1

Select the chapter number referring to the number on the jacket of the cassette tape.
Press + for a higher number, and – for a lower number.



CHAPTER
SEARCH 7
CHAP. 1



CHAPTER
SEARCH 7
CHAP. 3

When playback starts, the indication disappears after about 10 seconds.

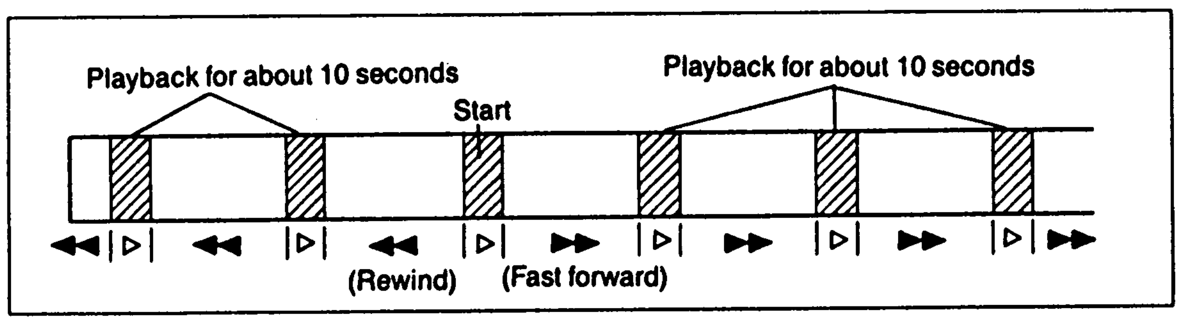
To correct the chapter or index number
When the "CHAP" or "INDEX" indications are displayed, you can correct the number with the INDEX –/+ button.

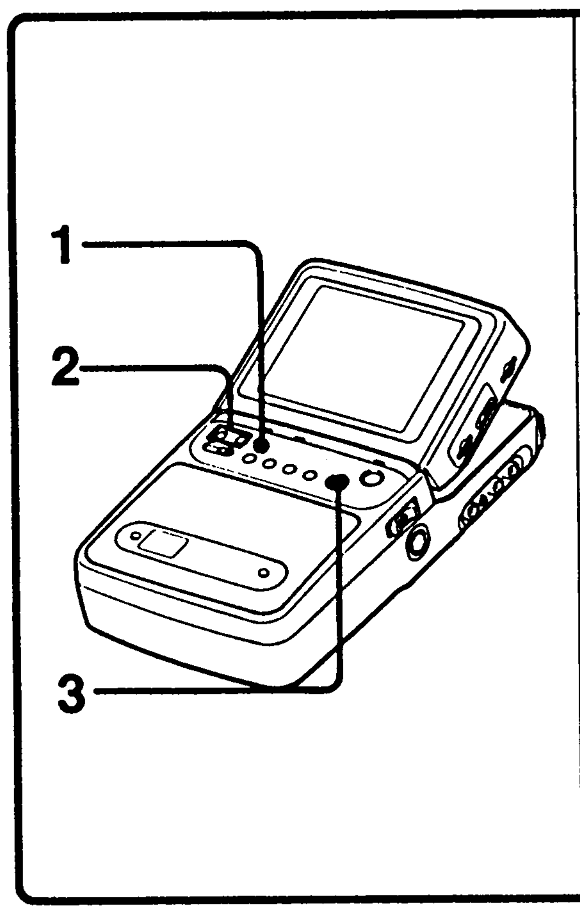
Note
Even with a video software which has prerecorded indexes, the indication is "INDEX SEARCH" until the tape is played back.

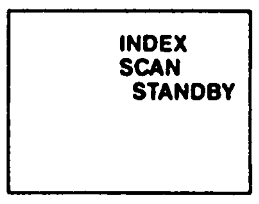
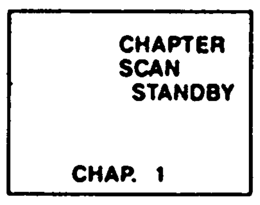
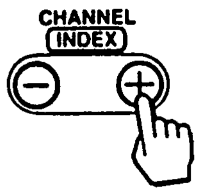
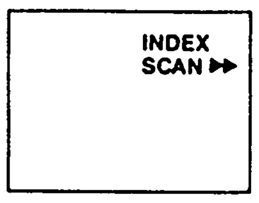
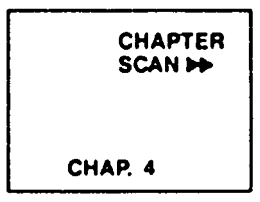
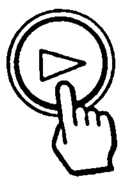
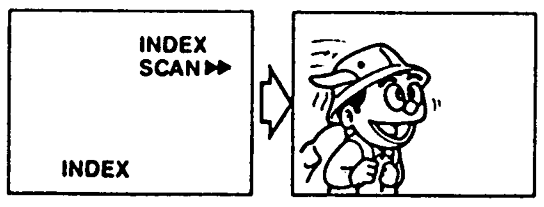
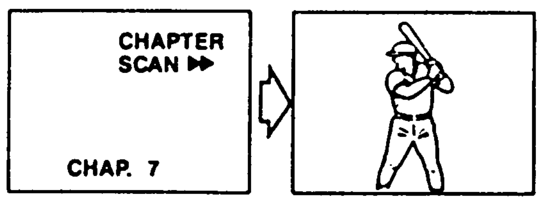
Index search does not function if an interval between indexes is less than two minutes. Leave an interval of at least two minutes between indexes.

To Scan Each Index Sequentially

The beginning of each index/chapter is played back for about 10 seconds sequentially. Start playback at the desired index/chapter.





	A Conventional index	B Prerecorded index for software
1 **During playback or the playback pause mode, press the INDEX MODE button twice.** The unit goes into the index standby mode. INDEX MODE	 INDEX SCAN STANDBY	 CHAPTER SCAN STANDBY CHAP. 1
2 **Press INDEX –/+ button.** Each chapter/index is played back for about 10 seconds sequentially. Press + for ▶▶ direction, and press – for ◀◀ direction.  CHANNEL INDEX	 INDEX SCAN ▶▶	 CHAPTER SCAN ▶▶ CHAP. 4
3 **Press** ▷ button at the desired point. 	 INDEX SCAN ▶▶ INDEX	 CHAPTER SCAN ▶▶ CHAP. 7

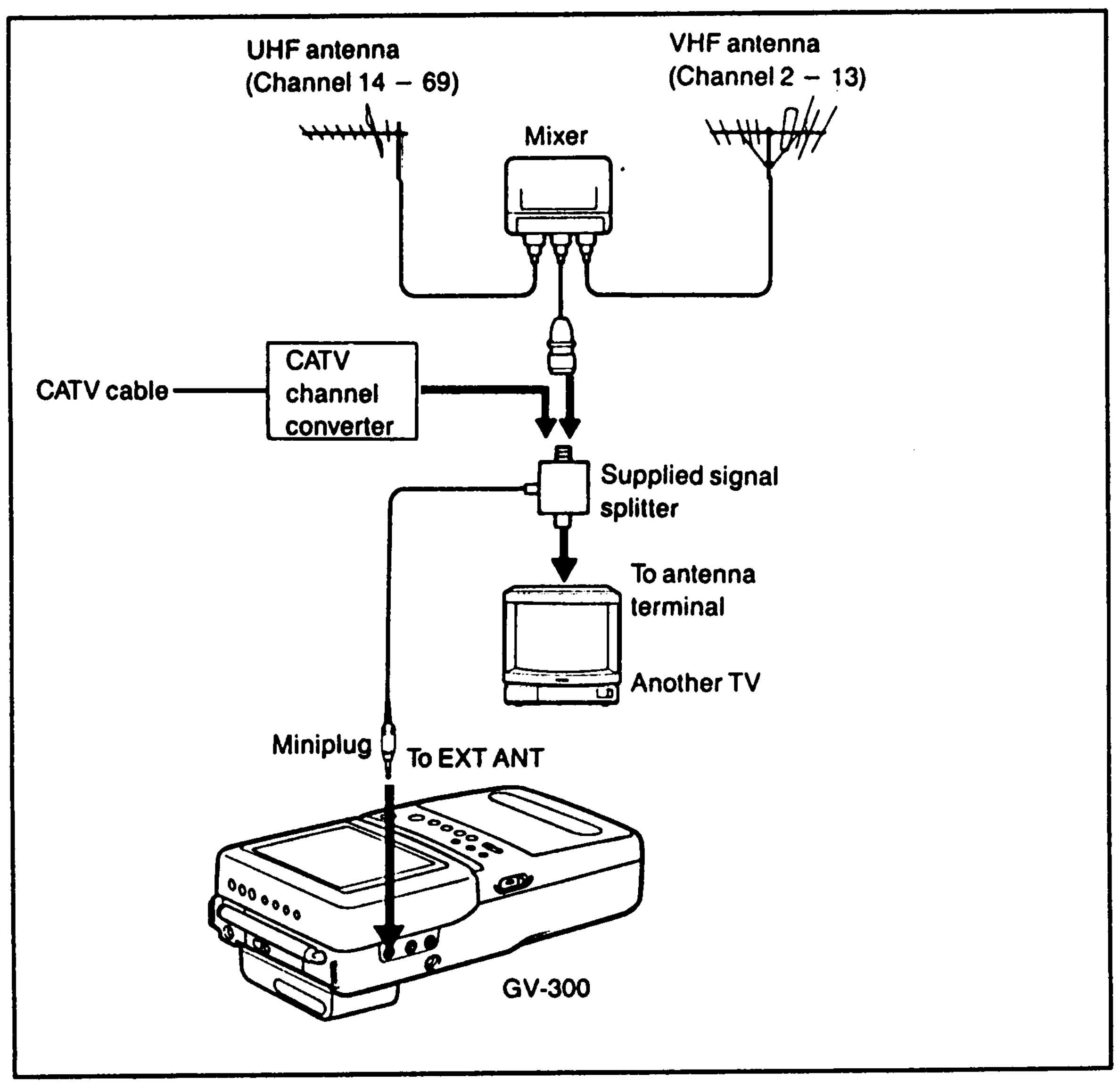
To correct the direction of index scan
Press INDEX –/+ during index scanning.

Index scan does not function if an interval between indexes is less than two minutes. Leave an interval of at least two minutes between indexes.

If you do not press the ▷ button during index scanning, the tape will be rewound or fast forwarded to the end of the tape.

Connecting an Outdoor Antenna and CATV cable

If you cannot obtain satisfactory reception with the telescopic antenna, or when recording TV programs, use an outdoor antenna. For viewing CATV channels, connect the CATV cable.



For connection, you can also use the antenna connector EAC-40, the signal splitter EAC-45, the antenna cord CCD-6M, and CCD-2 (not supplied.)

Notes
- Before connecting the antennas, turn off the unit.
- Make connections firmly. A loose connection may cause a distorted picture.
- When using the unit in a car, use the optional VCA-3W or VCA-4E car antenna, etc. For details, refer to the instruction manual of the car antenna.

Connecting other VCRs or Monitors

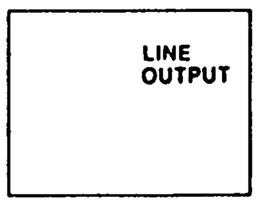
Notes on the VIDEO/AUDIO IN/OUT Jacks

The VIDEO/AUDIO IN/OUT jacks are automatically set to the input or output jacks according to the operating condition of the unit.

Refer to the following diagram:

Mode selected with INPUT SELECTION button	Stop or recording mode	Playback mode
TUNER (TV program)	output	output
LINE*	input	output
CAMERA	output	output

* When the LINE mode is selected with INPUT SELECT, the INPUT or OUTPUT indication appears with LINE.

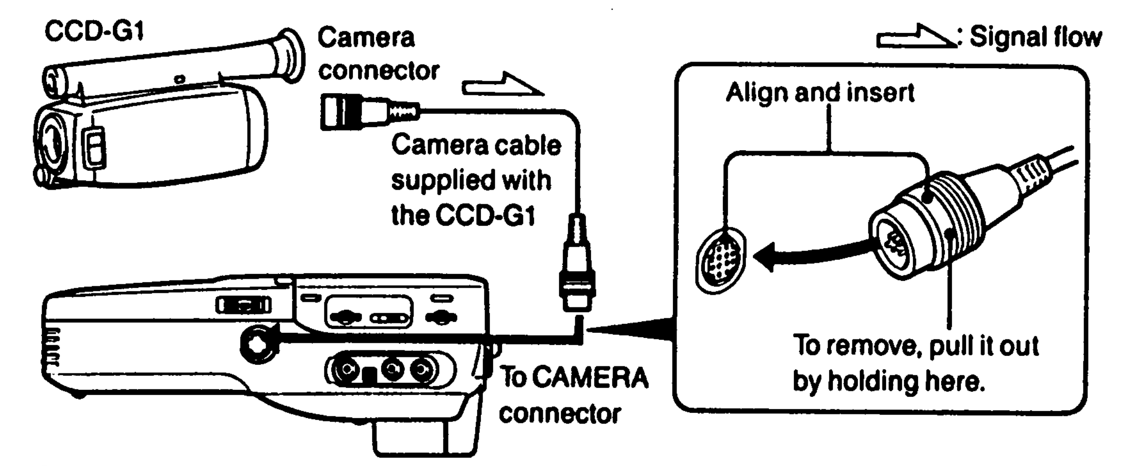

LINE
OUTPUT

Note
When the LINE OUT jacks of other equipment are connected to the VIDEO/AUDIO IN/OUT jacks on this unit, and signals are output from the jacks of the other equipment to this unit, the picture and sound of the other equipment may be distorted.
In such case, turn off the power of this unit or disconnect the other equipment.

Camera Recording — Controlling from the Camera

By connecting an optional Video Camera CCD-G1, recording controlled from the camera is possible. You can hold the camera and keep this unit in a carrying case while recording.
For details, refer to the instruction manual of the video camera.

Connection


CCD-G1
Camera connector
: Signal flow
Align and insert
Camera cable supplied with the CCD-G1
To CAMERA connector
To remove, pull it out by holding here.

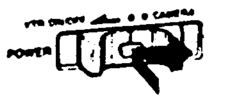
• Select the recording mode (SP/LP).

Note
The sound will be recorded in monaural.

Recording with CCD-G1

1 **Insert the cassette.**

2 **Set the POWER switch of this unit to CAMERA.**
The power of this unit is turned on, and the POWER, STEREO lamp lights up. This unit automatically becomes in the recording pause mode. To have the picture on the screen of this unit, press the LCD ON/OFF button.


VTR ON/OFF
CAMERA
POWER

While pressing the green button, slide to the right.

Note
Be sure that the POWER lamp lights up. If it does not, turn off the unit once by sliding the POWER switch to the left, then reset the switch to the CAMERA position.

3 **Start recording.**
Press the REC START/STOP button of the camera.

To index the recording starting point or the desired point, press the MARK button of this unit (see page 48.)

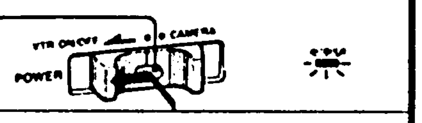
To stop recording for a moment
Press the REC START/STOP button. Press it again to start recording.

To stop recording
Turn the power off of this unit by setting the POWER switch to the center position.

Playing back the newly recorded pictures

1 **Turn the power on of this unit.**
The POWER lamp lights up.

While pressing the green button, slide to the left.


VTR ON/OFF
CAMERA
POWER

2 **Press** ◁◁ button of this unit to rewind the tape.

3 **Press □ button of this unit.**

4 **Press** ▷ button of this unit.

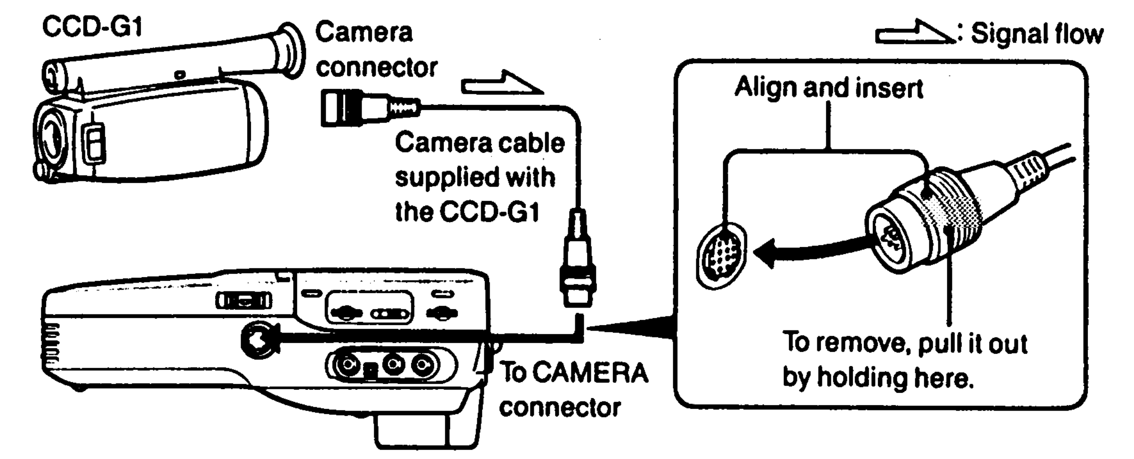
Caution
Do not operate this unit for a long time when it is in a carrying case like the one supplied. Internal heat build-up may occur which can cause this unit to malfunction.

When the POWER switch is set to CAMERA, the operable buttons are:
POWER switch, EJECT button, LCD ON/OFF button, DATA SCREEN button, COUNTER RESET button, INDEX mark button, and SP/LP button.

Camera Recording — Controlling from This Unit

By connecting the optional video camera CCD-G1, it is possible to record with this unit while using the camera in a distant place. For details, refer to the instruction manual of the video camera.

Connection


CCD-G1
Camera connector
: Signal flow
Align and insert
Camera cable supplied with the CCD-G1
To CAMERA connector
To remove, pull it out by holding here.

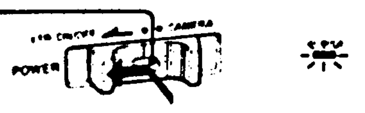
• Select the recording mode (SP/LP).

Note
The sound will be recorded in monaural.

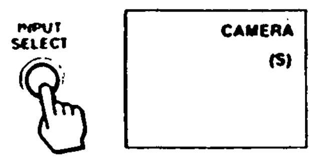
Recording

1 **Turn the power on of this unit.**
The POWER lamp lights up.

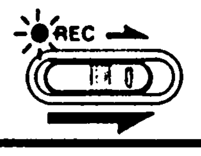
While pressing the green button, slide the POWER switch to the left.


VTR ON/OFF
CAMERA
POWER

2 **Press the INPUT SELECT button of this unit to display "CAMERA" on the screen.**
The STEREO lamp lights up. The picture to be recorded appears on the screen. If the focus or color need adjustments, adjust them on the camera. To have the picture disappear, press the LCD ON/OFF button.


INPUT SELECT
CAMERA
(S)

3 **Slide the REC switch of this unit.**
Recording starts.



To stop recording for a moment
Press ❚❚ button of this unit.

To stop recording
Press □button of this unit.

Playing back the newly recorded pictures

1 **Press ◀◀ button to rewind the tape.**

2 **Press □ button.**

3 **Press ▷ button.**

Recording with a camera from a distant place

Use the optional pan tilter HVR-200 for camera recording from a distant place, a maximum distance of 5m.

To listen to the sound that is being recorded
While recording, no sound is heard from the speaker. Connect the supplied stereo earphones to PHONES jack to listen to the sound.

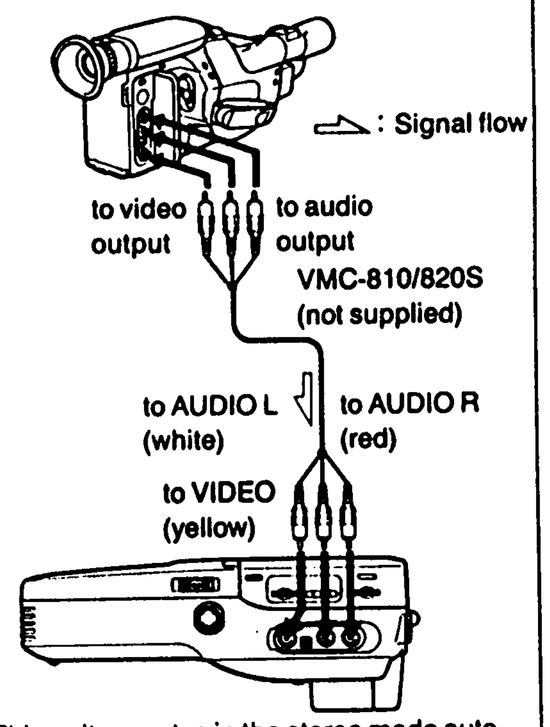
To use a camera with the timer-activated recording feature
This feature allows you to record a desired activity at a designated time, for example, a train passing by at a certain time. To set the timer, see page 41. The recording will start automatically at the time you set.

Using This Unit as a 8mm Video Camera Recorder Monitor

With the following connection, you can view pictures being recorded by the connected video camera recorder. Also you can view the playback pictures from the video camera recorder on this unit.

Connection

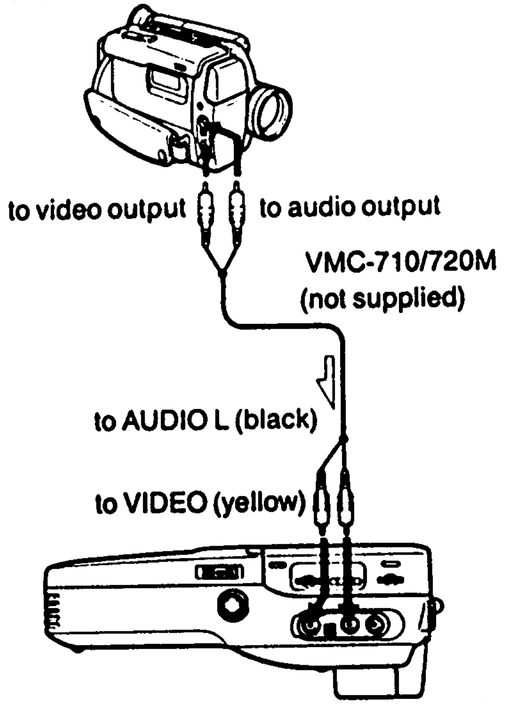
If the video camera recorder is stereo



: Signal flow
to video output
to audio output
VMC-810/820S
(not supplied)
to AUDIO L (white)
to AUDIO R (red)
to VIDEO (yellow)

This unit operates in the stereo mode automatically.

If the video camera recorder is monaural



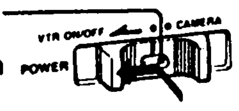
to video output
to audio output
VMC-710/720M
(not supplied)
to AUDIO L (black)
to VIDEO (yellow)

This unit operates in the monaural mode automatically.

Operation

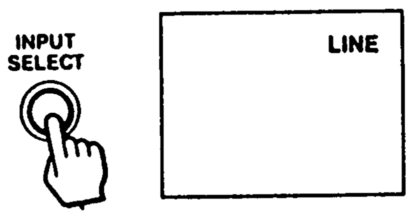
1 Turn the power on.
The POWER lamp lights up.

While pressing the green button, slide the POWER switch to the left.



VTR ON/OFF
CAMERA
POWER

2 Press the INPUT SELECT button to display "LINE" on the screen.

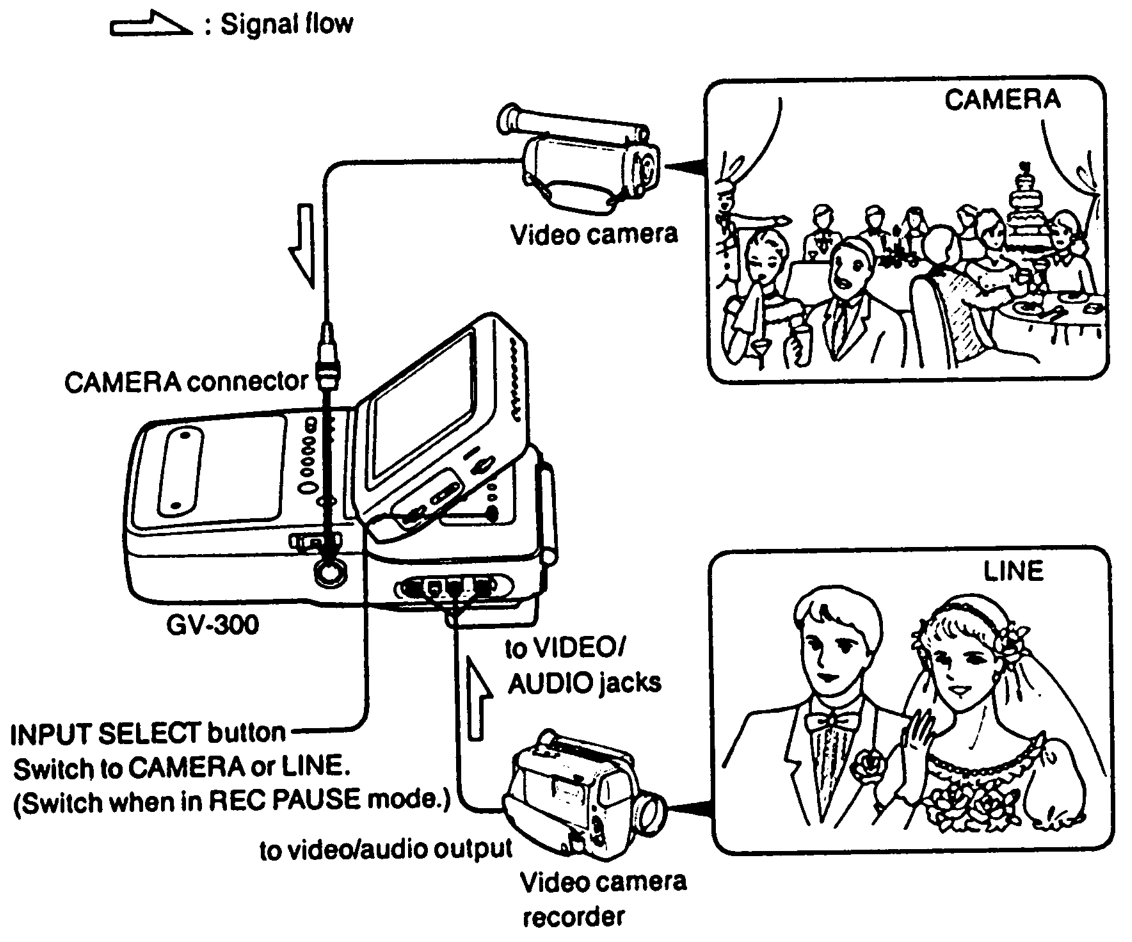


INPUT SELECT
LINE

3 Operate the video camera recorder.

When connecting both a video camera recorder and a video camera

Set each unit to different angles, then, using the INPUT SELECT button, switch the picture to be recorded on this unit.

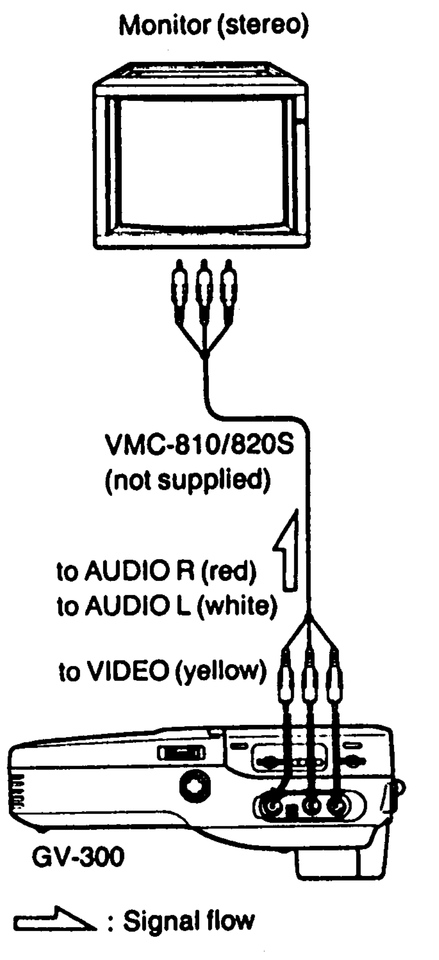


: Signal flow
CAMERA
Video camera
CAMERA connector
GV-300
LINE
to VIDEO/ AUDIO jacks
INPUT SELECT button
Switch to CAMERA or LINE.
(Switch when in REC PAUSE mode.)
to video/audio output
Video camera recorder

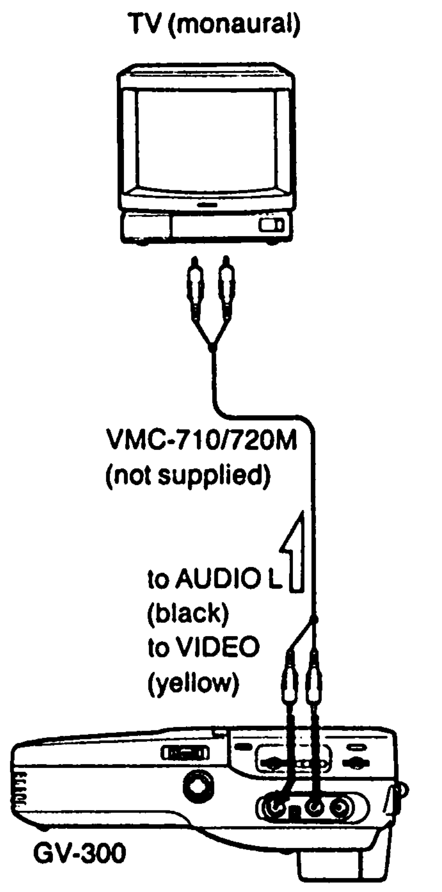
To Connect Another TV or Color Monitor

If you connect this unit to another TV or color monitor, you can view the playback pictures or the selected TV program on a larger screen and listen to the dynamic sound.
In this case, mute the picture of GV-300 by pressing the LCD ON/OFF button to reduce horizontal bands and noise in the picture of the TV or color monitor during various playback modes.

To connect a TV/monitor with video and audio inputs



Monitor (stereo)
VMC-810/820S
(not supplied)
to AUDIO R (red)
to AUDIO L (white)
to VIDEO (yellow)
GV-300
: Signal flow

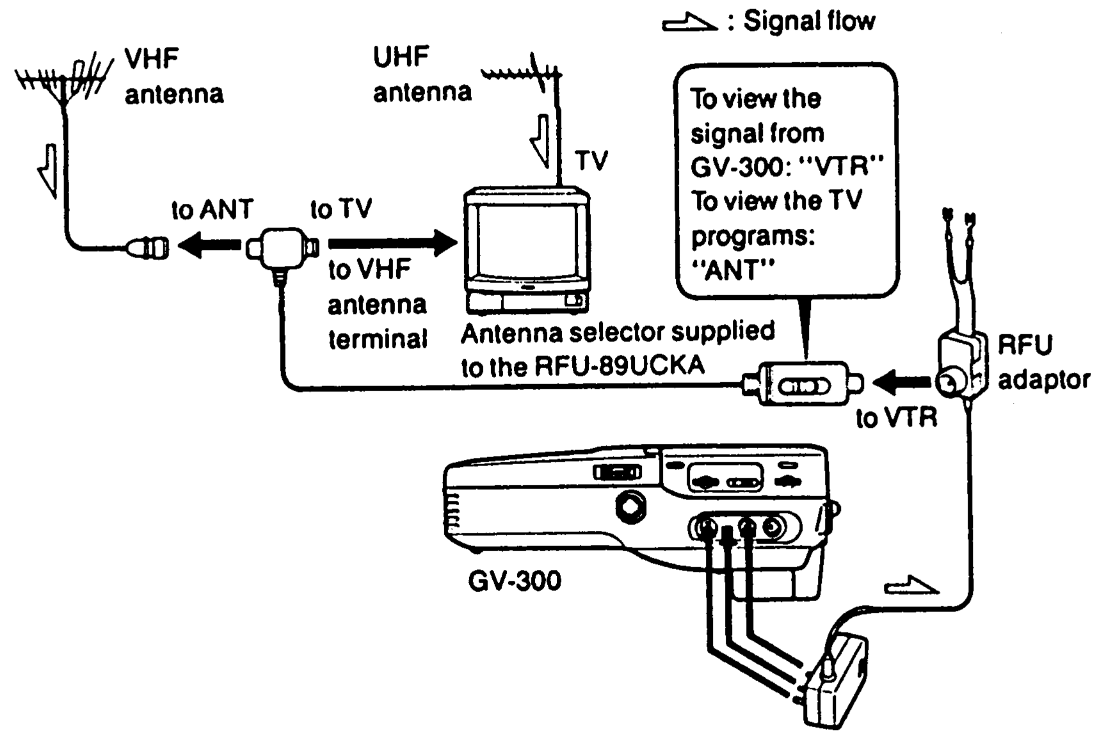


TV (monaural)
VMC-710/720M
(not supplied)
to AUDIO L (black)
to VIDEO (yellow)
GV-300

Note
When connecting only to the AUDIO L jack, the L and R sounds are automatically mixed and always output is monaural.

To connect a TV without video and audio inputs

Use the RFU-89UCKA RFU kit (not supplied).



: Signal flow
VHF antenna
UHF antenna
TV
to ANT
to TV
to VHF antenna terminal
To view the signal from GV-300: "VTR"
To view the TV programs: "ANT"
Antenna selector supplied to the RFU-89UCKA
RFU adaptor
to VTR
GV-300

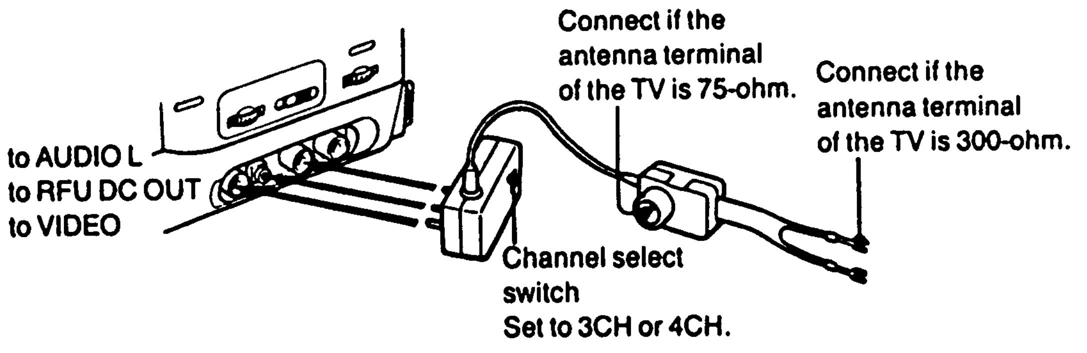
Note on the RFU-89UCKA RFU kit

The RFU-89UCKA includes the following accessories:
- RFU adaptor (1)
- Antenna selector (1)
- Antenna selector adaptor (1)

Channel for VCR

To view the playback picture of this unit, set the antenna selector of the RFU kit to channel 3 or 4, whichever channel is not active in your area, and select the same channel on the connected TV.

To connect the RFU adaptor



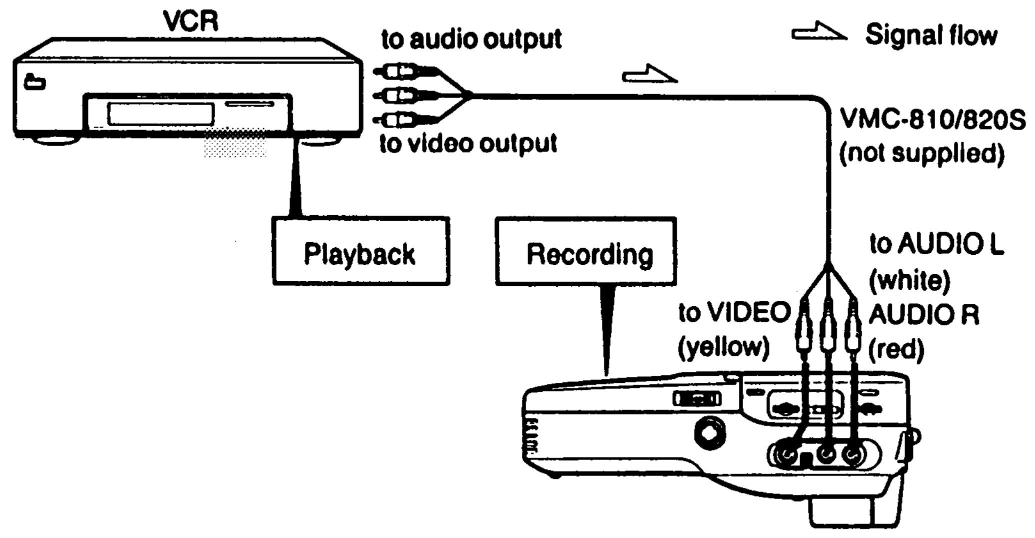
Connect if the antenna terminal of the TV is 75-ohm.
Connect if the antenna terminal of the TV is 300-ohm.
to AUDIO L
to RFU DC OUT
to VIDEO
Channel select switch
Set to 3CH or 4CH.

Editing Tapes

You can edit tapes by connecting when another VCR (8mm, Beta or VHS format) with video/audio input.

To Edit from Another VCR to This Unit

Connection

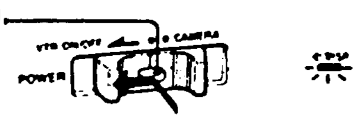

VCR
to audio output
Signal flow
to video output
VMC-810/820S
(not supplied)
Playback
Recording
to AUDIO L
(white)
to VIDEO
(yellow)
AUDIO R
(red)

If the VCR to be connected has a monaural audio output only, use a commercially available connecting cord such as the VMC-910/920M. In this case, connect to the AUDIO L and VIDEO jacks.

Operation

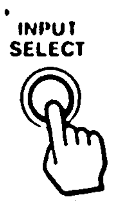
1 Turn the power on.
The POWER lamp illuminates.

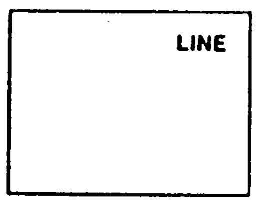
While pressing green button, slide the POWER switch to the left.


VTR ON/OFF
CAMERA
POWER

2 Insert the cassette.

3 Press the INPUT SELECT button so that the "LINE" indication appears.


INPUT
SELECT



4 Select the recording mode (SP/LP) by pressing the SP/LP button.

5 Play back the tape on another VCR and press the II PAUSE button at the point you want to start playing back.

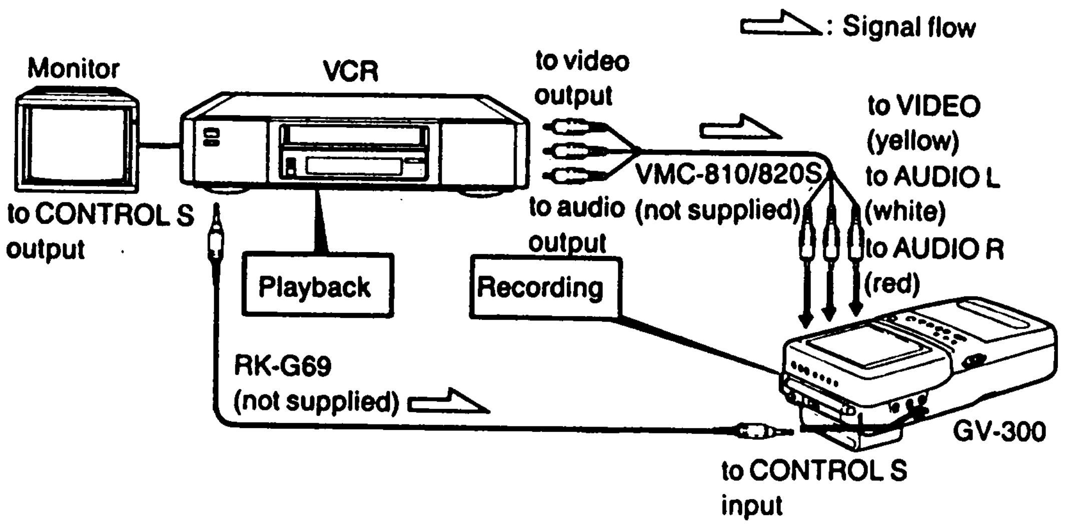
6 Set this unit in the recording pause mode.

7 Release the II PAUSE buttons on both units.

8 After editing is completed, press the □ STOP buttons on both units to stop recording.

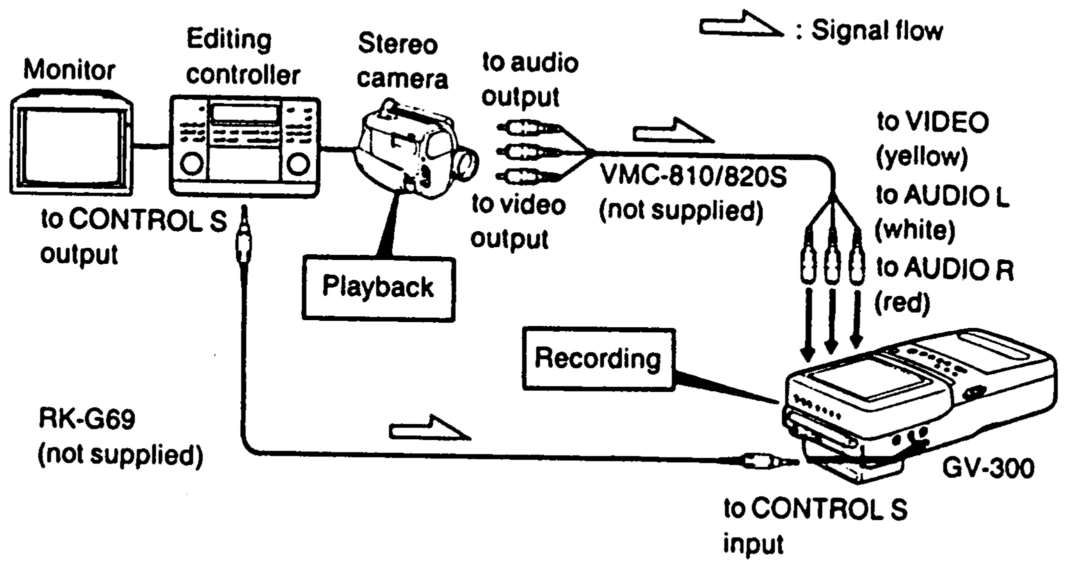
To edit from the VCR equipped with the CONTROL S output

Connect the CONTROL S input jack on this unit and the CONTROL S output jack on the other equipment.
Playback/pause on the other VCR and recording/pause on this unit can be operated simultaneously.

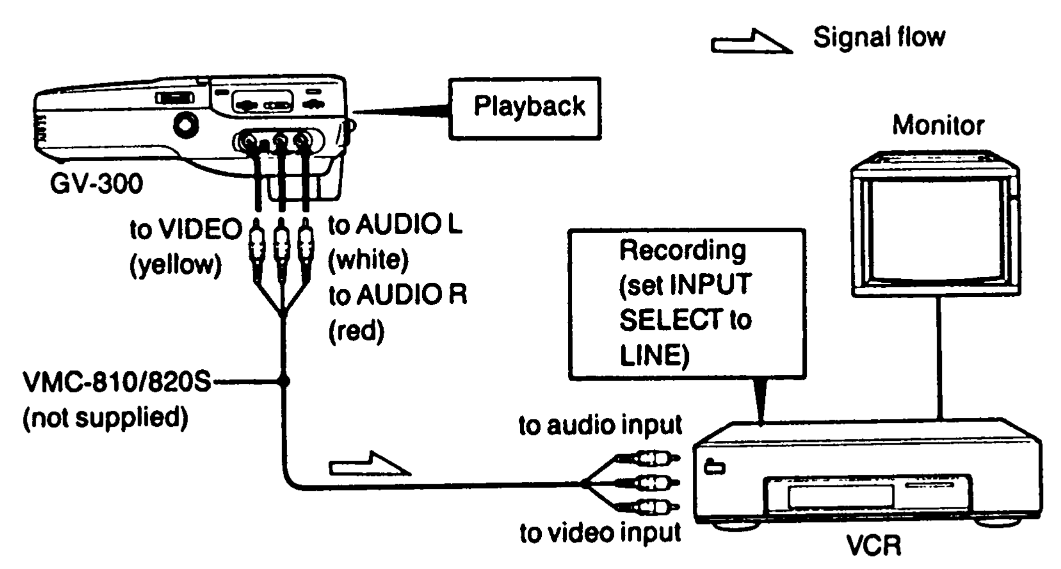

: Signal flow
Monitor
VCR
to video output
to VIDEO (yellow)
VMC-810/820S
to AUDIO L (white)
to CONTROL S output
to audio output
(not supplied)
to AUDIO R (red)
Playback
Recording
RK-G69
(not supplied)
GV-300
to CONTROL S input

To edit with the editing controller

By connecting the editing controller, the recorder and player can be operated easily with the controller.


: Signal flow
Monitor
Editing controller
Stereo camera
to audio output
to VIDEO (yellow)
VMC-810/820S
to AUDIO L (white)
to CONTROL S output
to video output
(not supplied)
to AUDIO R (red)
Playback
Recording
RK-G69
(not supplied)
GV-300
to CONTROL S input

To Edit from This Unit to Another VCR



If the VCR to be connected has a monaural audio input only, use a commercially available connecting cord such as VMC-710/720M. In this case, connect to the AUDIO L and VIDEO jacks.

Precautions

Operation

- Operate the unit on 6.0 V (battery pack)/7.5 V (AC power adaptor)/6.5 V (DC pack DCP-77).
- For DC or AC operation, use the accessories supplied or recommended in this manual.
- Should any solid object or liquid fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Avoid rough handling or mechanical shock to the unit.
- Do not apply excessive force to the LCD.
- Remove and store video cassettes after recording or playback.
- Do not wrap up the unit and operate it because heat may build up internally.
- Avoid using and storing the recorder in the following locations:
  - — Locations susceptible to vibration
  - — Locations exposed to strong magnetic fields
  - — Locations near TV or radio transmitters where strong radio waves are generated
- Do not place the unit on the sand.

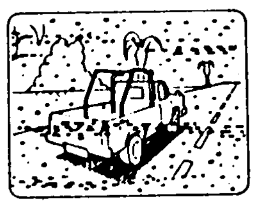
Care

- When the unit is not used for a long period of time, periodically turn on the power, operate the recorder and play back a tape for about three minutes.
- Clean the recorder body with a dry, soft cloth, or a soft cloth lightly moistened with a mild detergent solution. Do not use any type of solvent which may damage the finish.

Maintenance

Video Head Cleaning

To ensure a clear picture, clean the video heads periodically.
If playback pictures are noisy or hardly visible, the video heads may be contaminated. In this case, clean the video heads with the Sony V8-25CLH cleaning cassette (not supplied) according to the instructions.



Caution
Do not use commercially available wet-type cleaning cassettes. They may damage the video heads.

Note
If the V8-25CLH cleaning cassette is not available in your area, consult your Sony service facility.

If the Video Head is Damaged

When playback pictures are not clear even after using the cleaning cassette, the video head may be damaged. In this case, the video head needs to be replaced with a new one. Consult your Sony service facility for replacing the video head.

Note on the built-in lighting system

A built-in lighting system is assembled inside the liquid crystal screen of this unit. The life of the small fluorescent tube used for this built-in lighting system runs out over a period of use. If the lamp becomes dimmer or goes off immediately after you turn it on, even with new batteries, replace the lamp with a new one. To replace the lamp, consult the dealer where you purchased the unit, or a Sony service facility. The expected life of the small fluorescent tupe is about three years if this unit is used for an hour each day. When you use this unit in a cold environment, the fluorescent tube will be dimmer at first. As soon as the temperature of the tube rises, it will regain its original brightness.

Note on the LCD

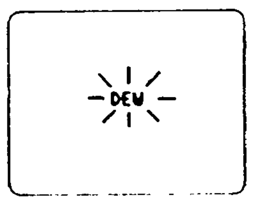
- Do not push the display forcibly.
- Do not operate the unit where the temperature is below 0°C (32°F) or above 40°C(104°F).
- If the unit is used in a cold place, a residual image may appear on the screen. This is not a malfunction of the unit.
- Constant bright points of light (red, blue, or green) may appear on the screen. This is not a malfunction of the unit.

Notes on Moisture Condensation

If this unit is brought directly from a cold place to a warm place, moisture may condense inside the unit or on the surface of the tape. If this happens, the tape may stick to the head drum, damaging both the tape and the unit. Although this unit is furnished with a moisture sensor to prevent possible damage from condensation, do not leave the tape inside the unit.

If moisture condenses inside the unit

The "DEW" indication appears on the screen.
In this case, no button will function except the EJECT button. (However, if you have been watching a TV program, you can continue to do so.)
Eject the cassette, turn off the unit and leave the cassette holder open at least for an hour.



The unit can be used again if the DEW indication does not appear when one of the tape transport buttons is pressed.

Using Your Video TV Recorder Abroad

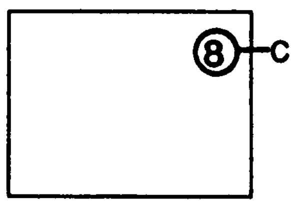
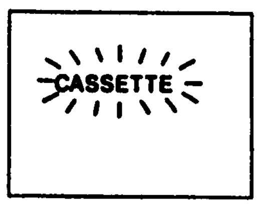
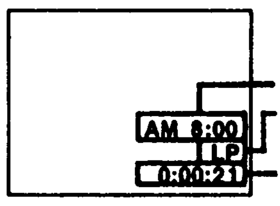
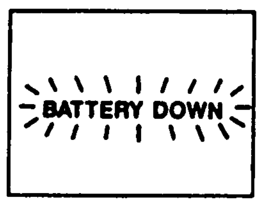
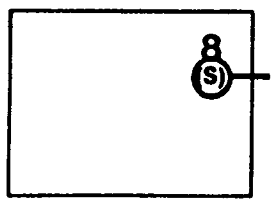
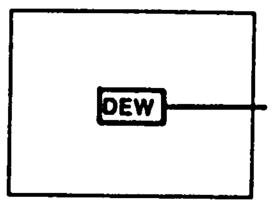
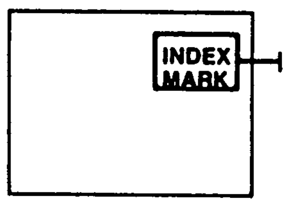
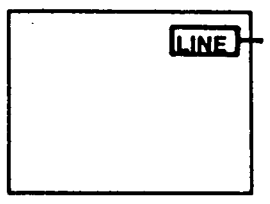
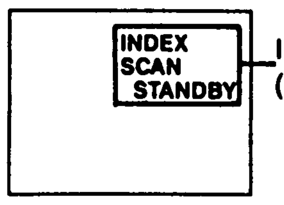
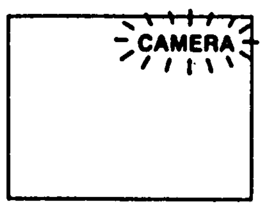
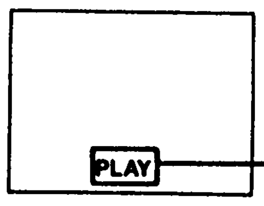
If you prepare fully charged battery packs and the supplied AC power adaptor (which can be used in all areas with a local power supply of 100 V-240 V), you can use your recorder in any country.

Each country has special TV color broadcast and electricity systems. This unit is designed to record and play back using the NTSC color video signals. Recording and playback of video sources based on other color systems cannot be guaranteed.

NTSC system countries
Bahama Islands, Canada, Central America, Japan, Korea, Mexico, Taiwan, the Phillipines, U.S.A., etc.

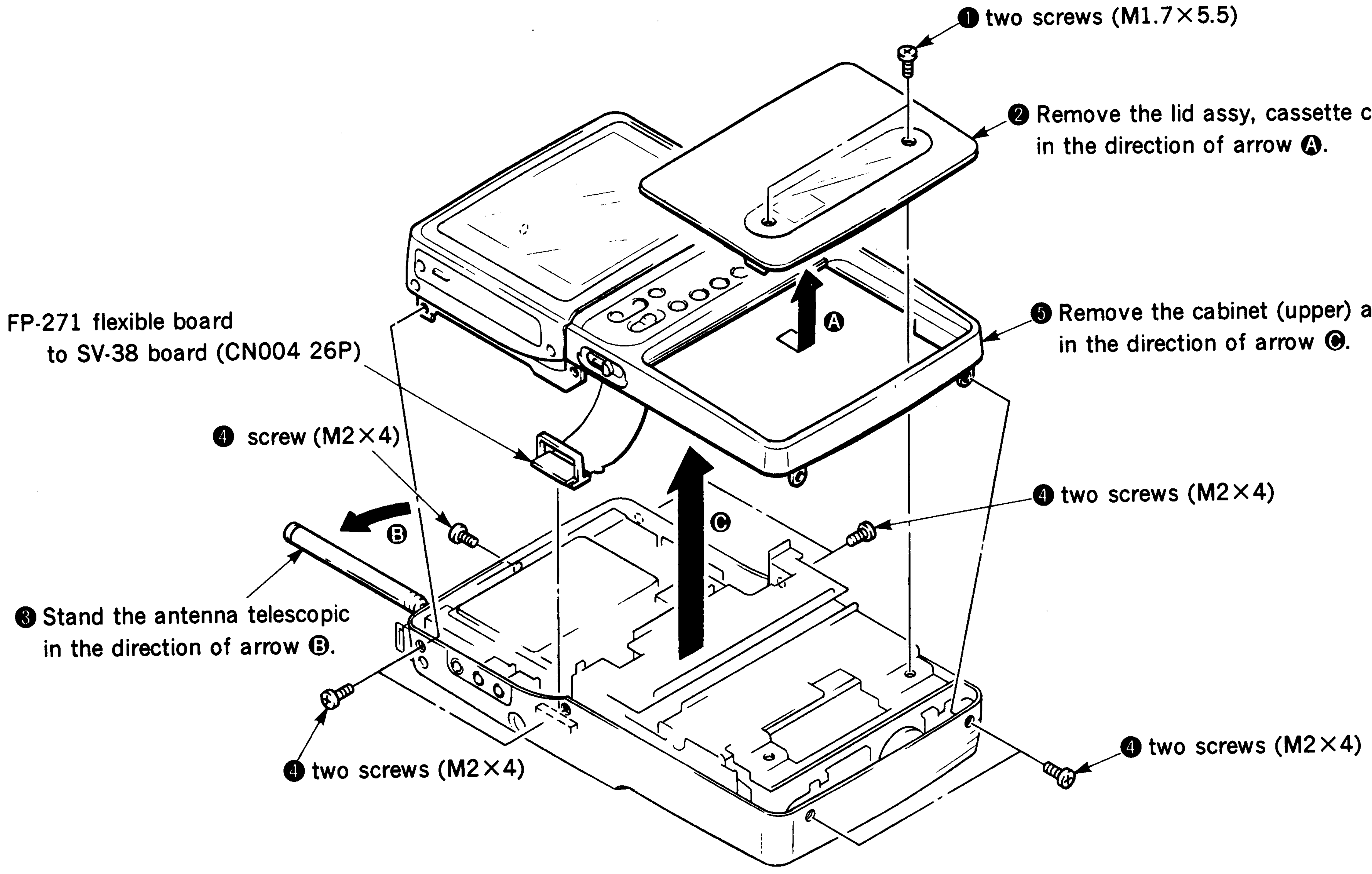
List of On-Screen Displays

The following indications appear on the screen indicating the operation condition and cautions.

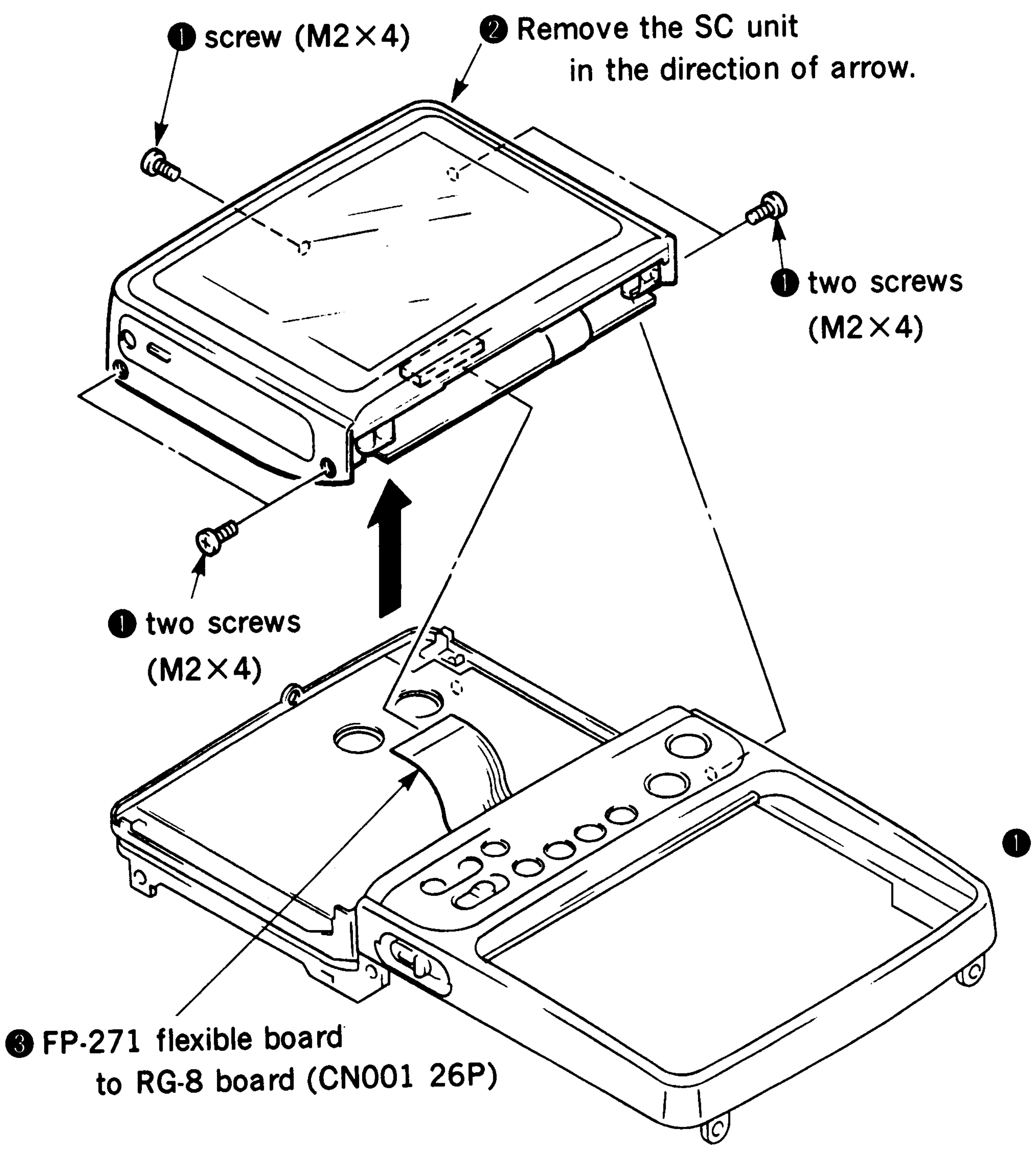
Indication	Meaning (reference page)	Indication	Meaning
	Channel (page 28)		Caution for the cassette (page 38)
	Current time Recording mode (page 37) Counter (page 39)		Battery is exhausted (page 14)
	Stereo (page 31)		Moisture condensation (page 71)
	Index (page 48)		Input from VIDEO/AUDIO jack (page 55)
	Index operation (page 48 ~ 53)		Input from CAMERA connector (page 59)
	Tape transport operation (page 47)		

SECTION 2
DISASSEMBLY

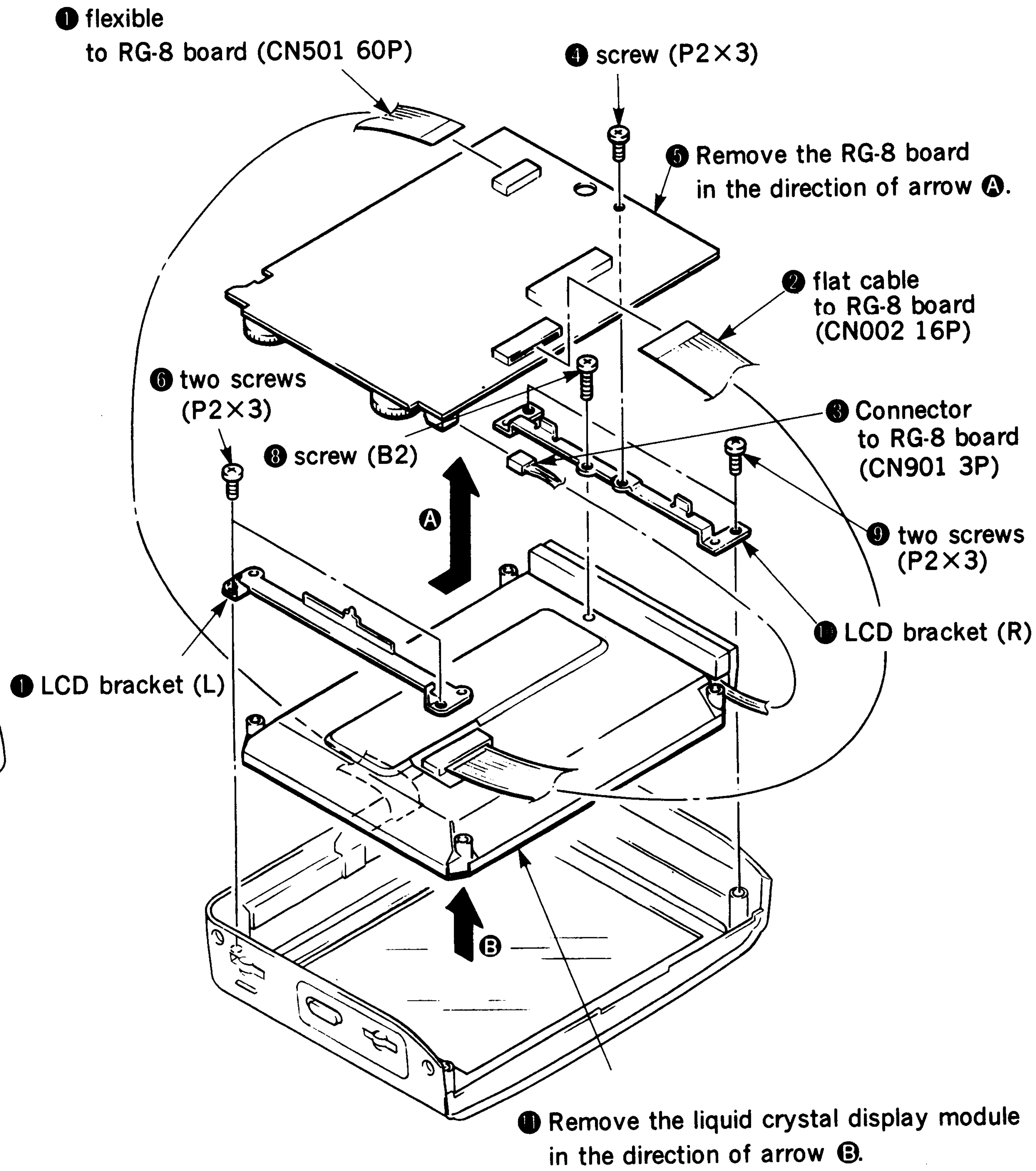
2-1. REMOVAL OF CABINET (UPPER) ASSY


❶ two screws (M1.7×5.5)
❷ Remove the lid assy, cassette compartment in the direction of arrow Ⓐ.
❻ FP-271 flexible board to SV-38 board (CN004 26P)
Ⓐ
❺ Remove the cabinet (upper) assy in the direction of arrow Ⓒ.
❹ screw (M2×4)
Ⓑ
Ⓒ
❹ two screws (M2×4)
❸ Stand the antenna telescopic in the direction of arrow Ⓑ.
❹ two screws (M2×4)
❹ two screws (M2×4)

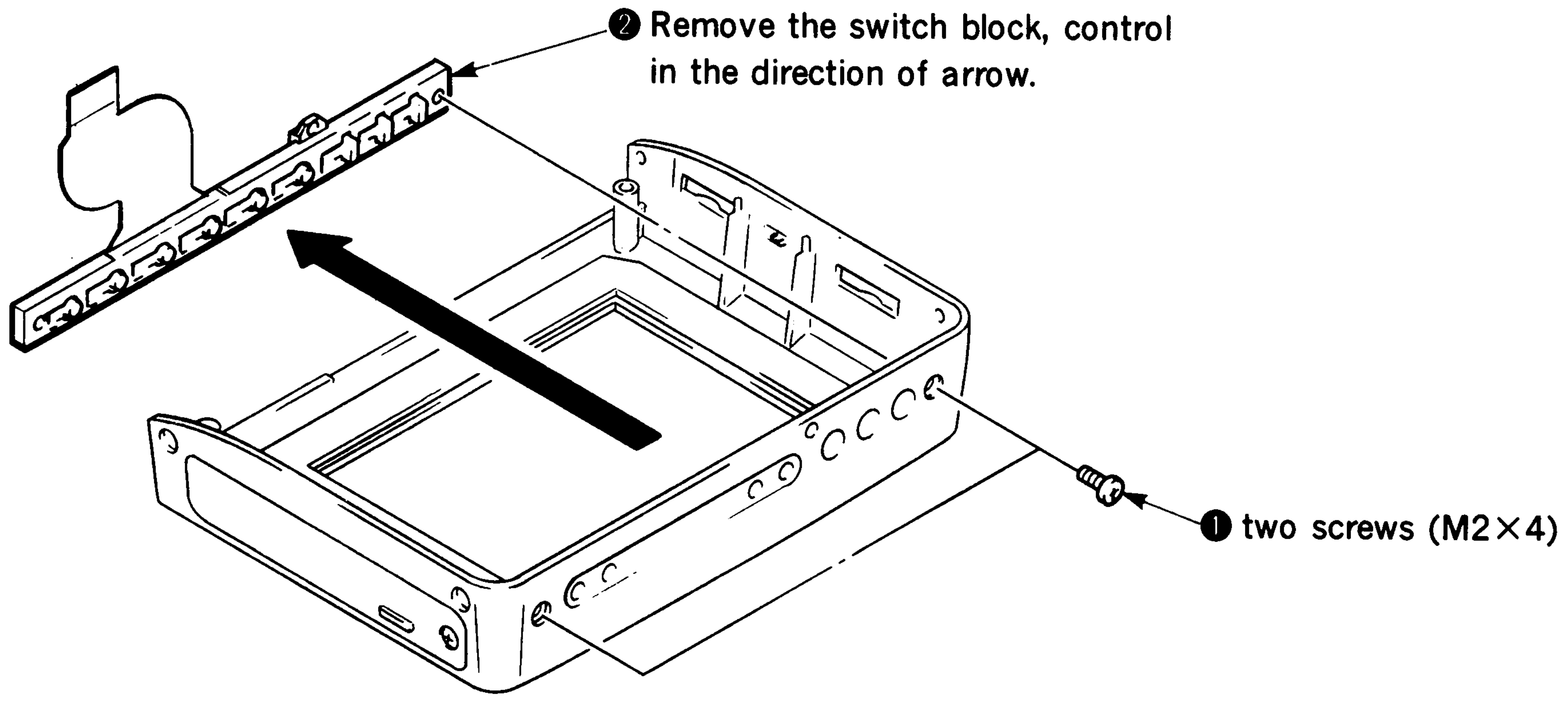
2-2. REMOVAL OF SC UNIT


❶ screw (M2×4)
❷ Remove the SC unit in the direction of arrow.
❶ two screws (M2×4)
❶ two screws (M2×4)
❸ FP-271 flexible board to RG-8 board (CN001 26P)

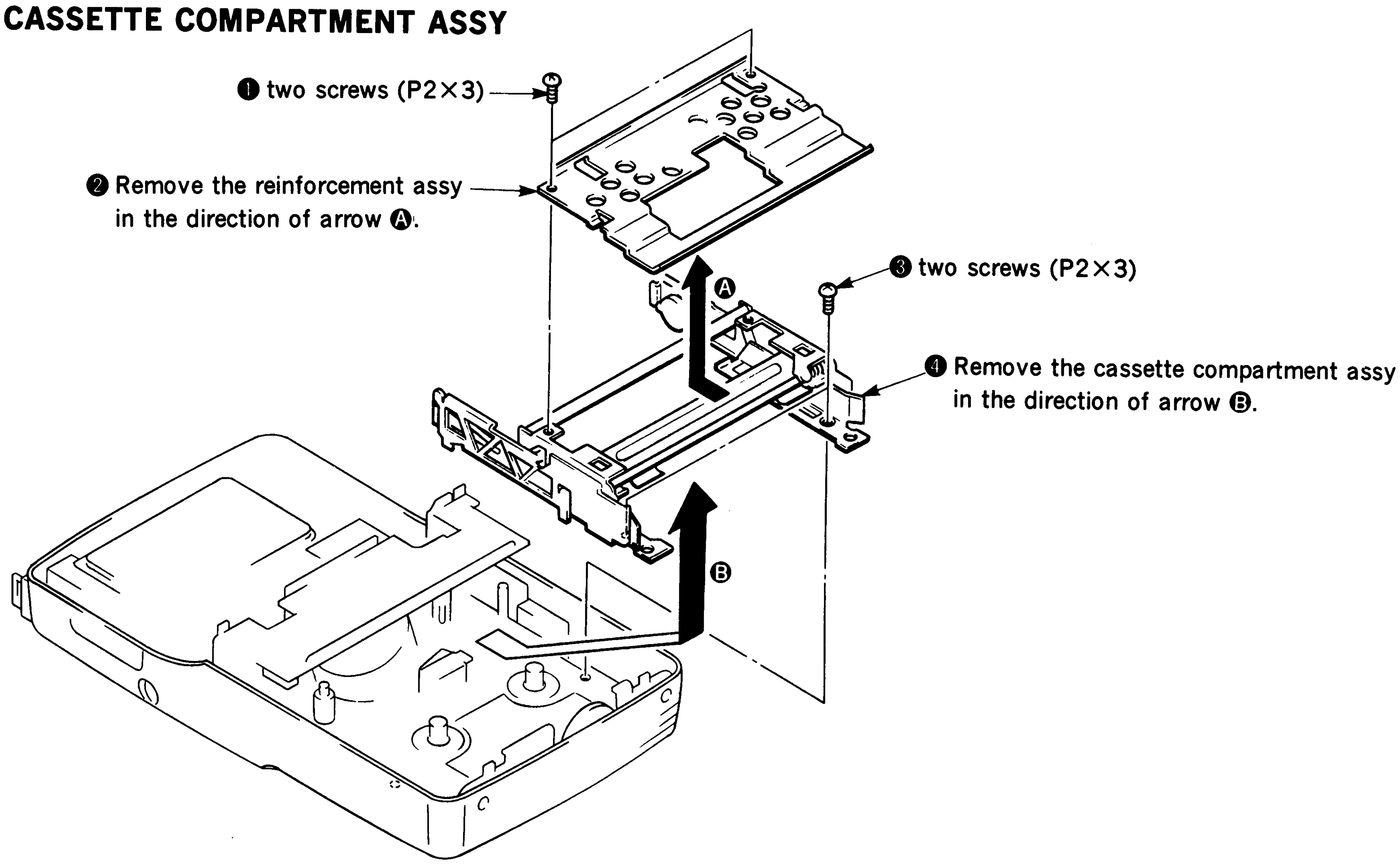
2-3. REMOVAL OF LIQUID CRYSTAL DISPLAY MODULE


❶ flexible to RG-8 board (CN501 60P)
❹ screw (P2×3)
❺ Remove the RG-8 board in the direction of arrow Ⓐ.
❷ flat cable to RG-8 board (CN002 16P)
❻ two screws (P2×3)
❽ screw (B2)
❸ Connector to RG-8 board (CN901 3P)
Ⓐ
❾ two screws (P2×3)
❿ LCD bracket (R)
❶ LCD bracket (L)
Ⓑ
⓫ Remove the liquid crystal display module in the direction of arrow Ⓑ.

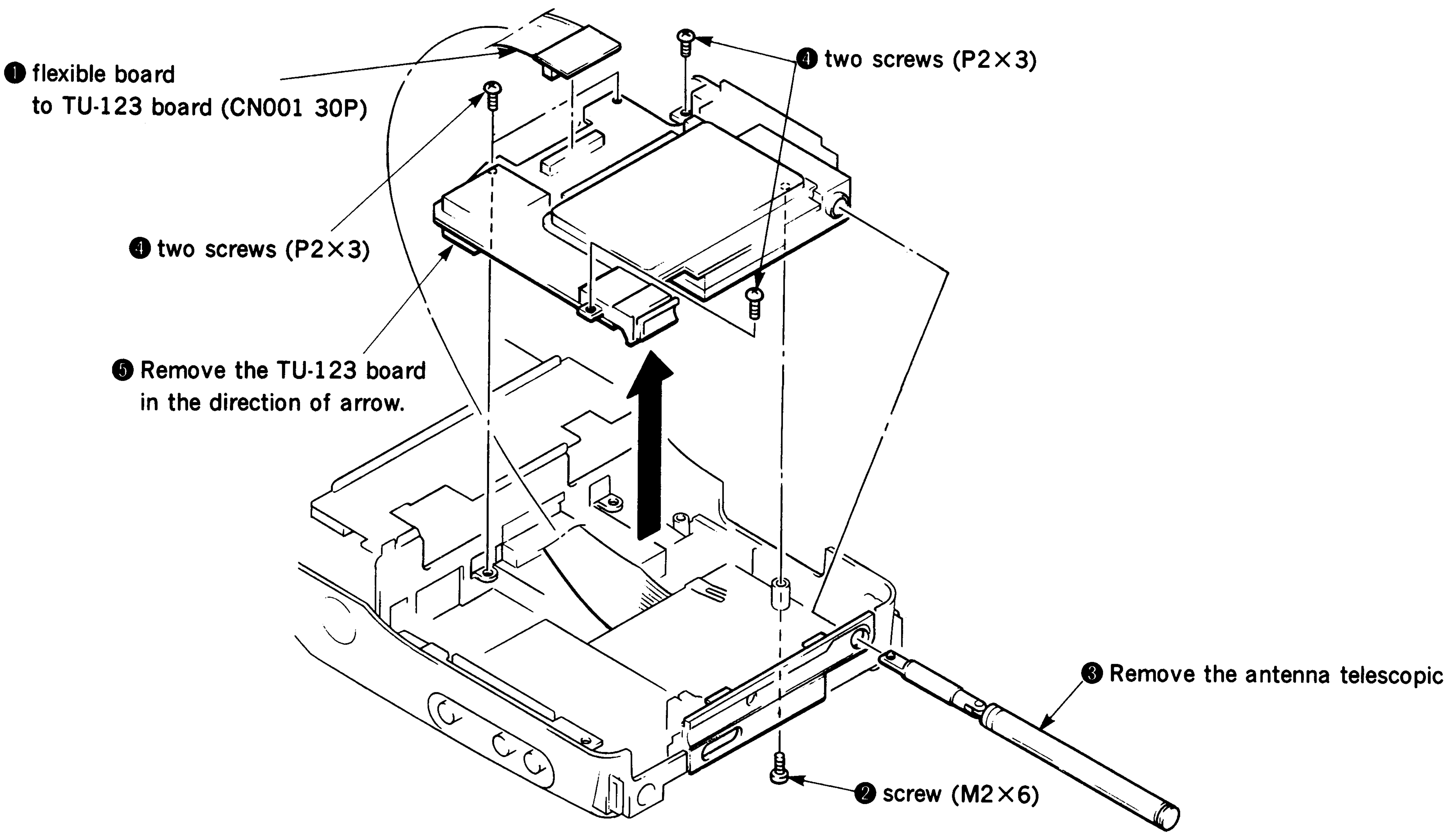
2-4. REMOVAL OF CONTROL SWITCH BLOCK


❷ Remove the switch block, control in the direction of arrow.
❶ two screws (M2×4)

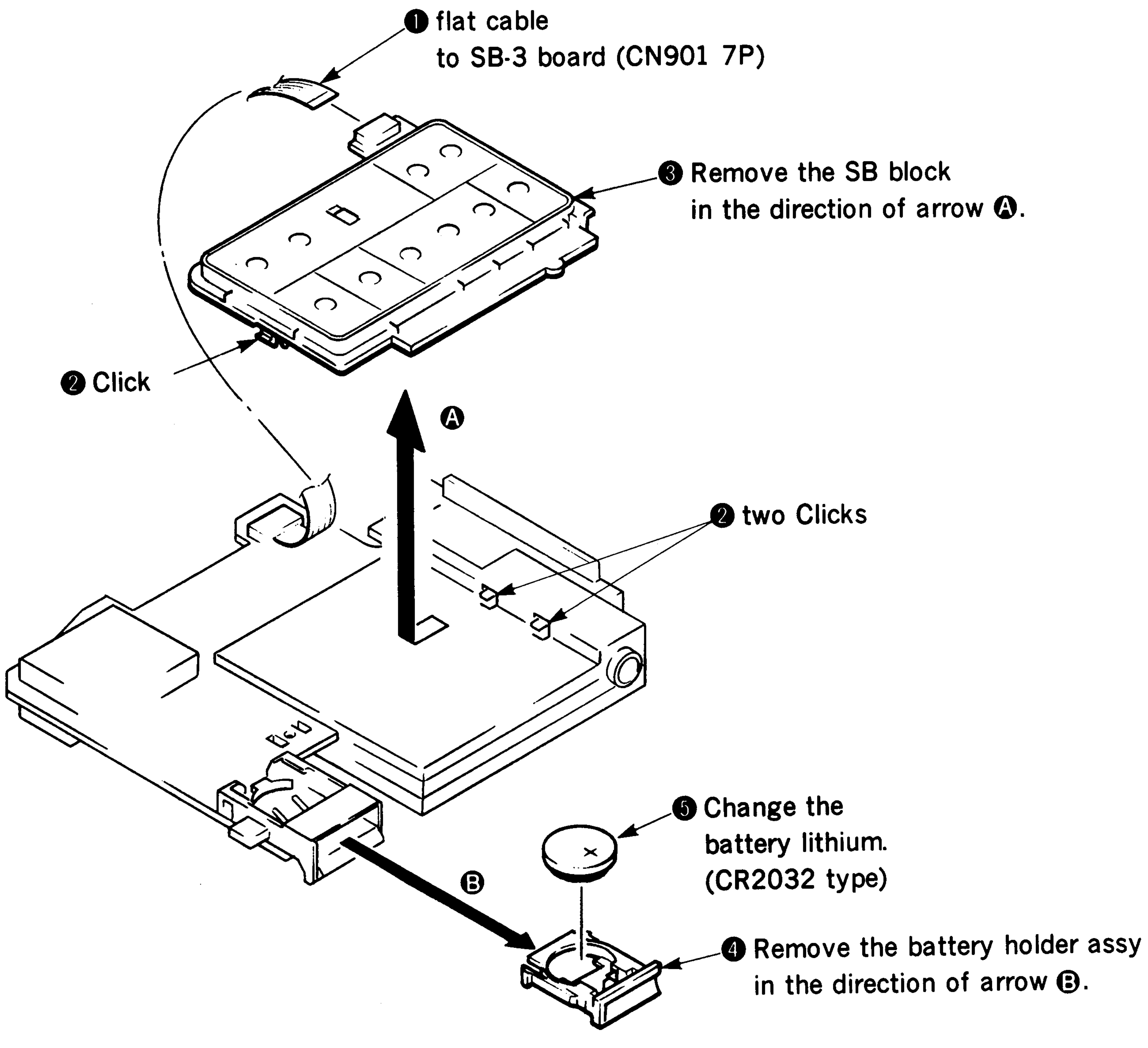
2-5. REMOVAL OF CASSETTE COMPARTMENT ASSY


❶ two screws (P2×3)
❷ Remove the reinforcement assy in the direction of arrow Ⓐ.
Ⓐ
❸ two screws (P2×3)
❹ Remove the cassette compartment assy in the direction of arrow Ⓑ.
Ⓑ

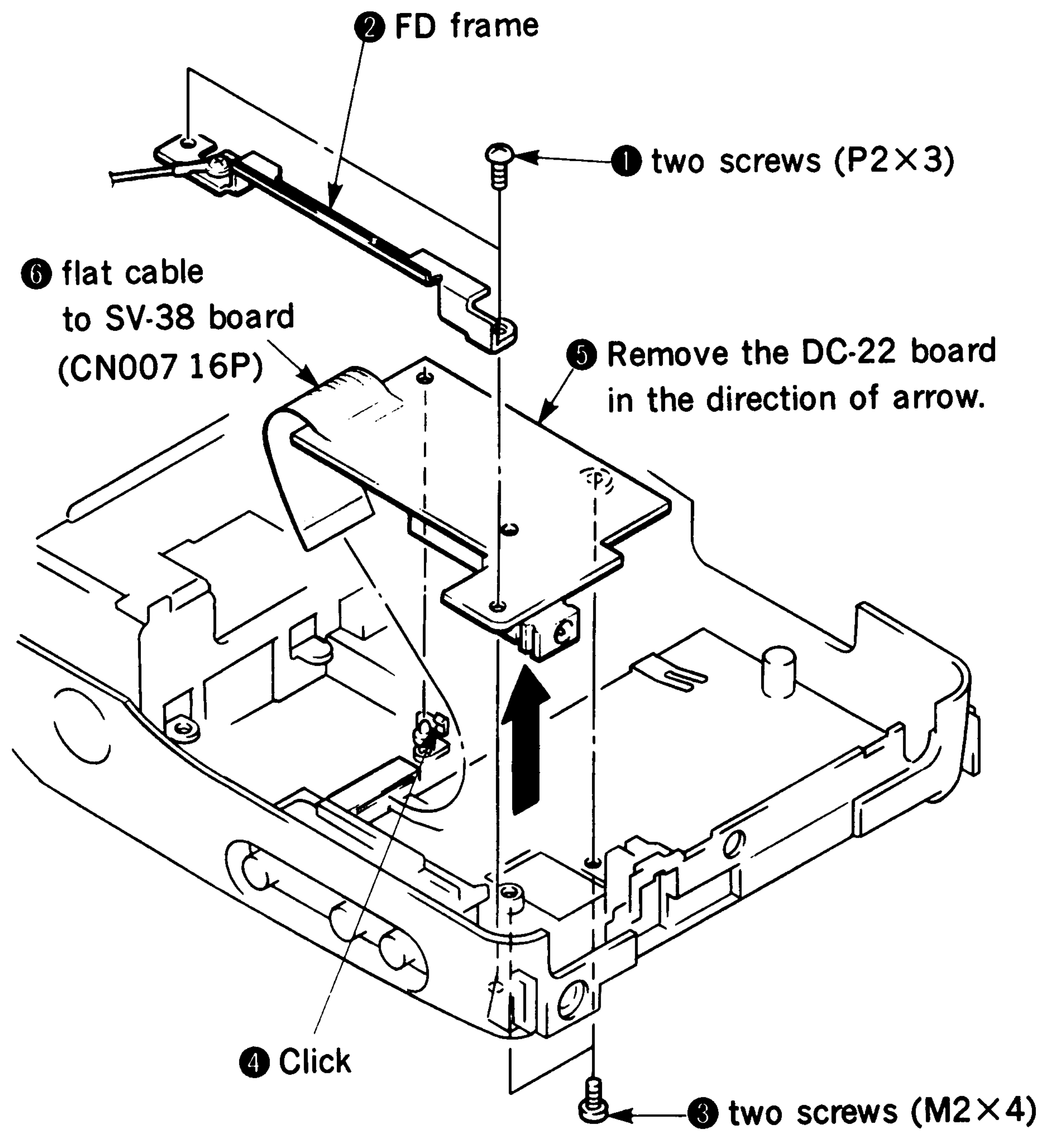
2-6. REMOVAL OF TU-123 BOARD


❶ flexible board to TU-123 board (CN001 30P)
❹ two screws (P2×3)
❹ two screws (P2×3)
❺ Remove the TU-123 board in the direction of arrow.
❸ Remove the antenna telescopic
❷ screw (M2×6)

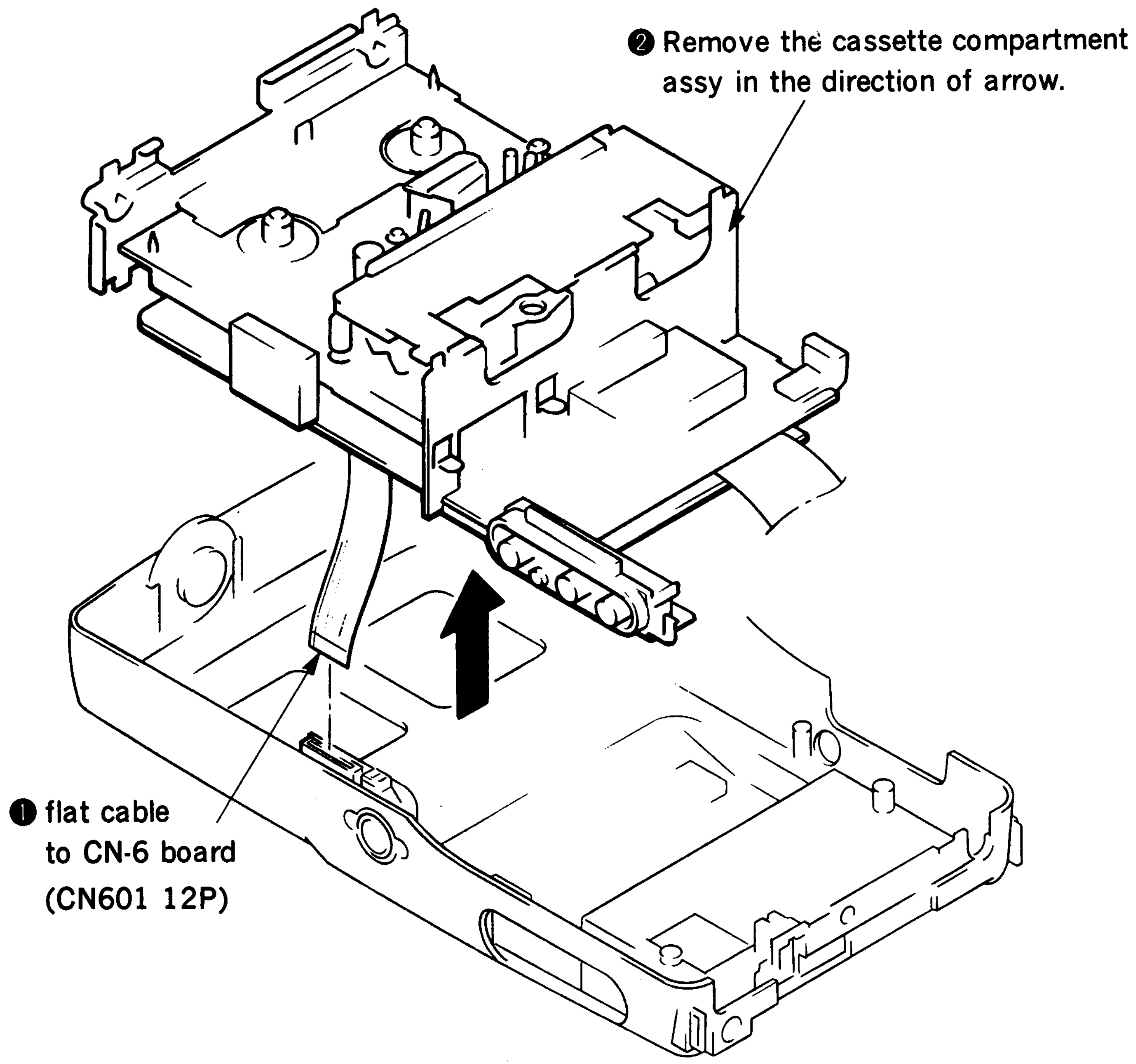
2-7. REMOVAL OF SB BLOCK AND LITHIUM BATTERY


❶ flat cable
to SB-3 board (CN901 7P)
❸ Remove the SB block
in the direction of arrow Ⓐ.
❷ Click
Ⓐ
❷ two Clicks
❺ Change the
battery lithium.
(CR2032 type)
Ⓑ
❹ Remove the battery holder assy
in the direction of arrow Ⓑ.

2-8. REMOVAL OF DC-22 BOARD


❷ FD frame
❶ two screws (P2×3)
❻ flat cable
to SV-38 board
(CN007 16P)
❺ Remove the DC-22 board
in the direction of arrow.
❹ Click
❸ two screws (M2×4)

2-9. REMOVAL OF MECHANISM DECK


❷ Remove the cassette compartment
assy in the direction of arrow.
❶ flat cable
to CN-6 board
(CN601 12P)

2-10. INTERNAL VIEWS

— UPPER —

(DGU-69A-R) Drum Assy	A-7048-382-A
(DGR-69-R) Drum Upper	A-7049-324-A

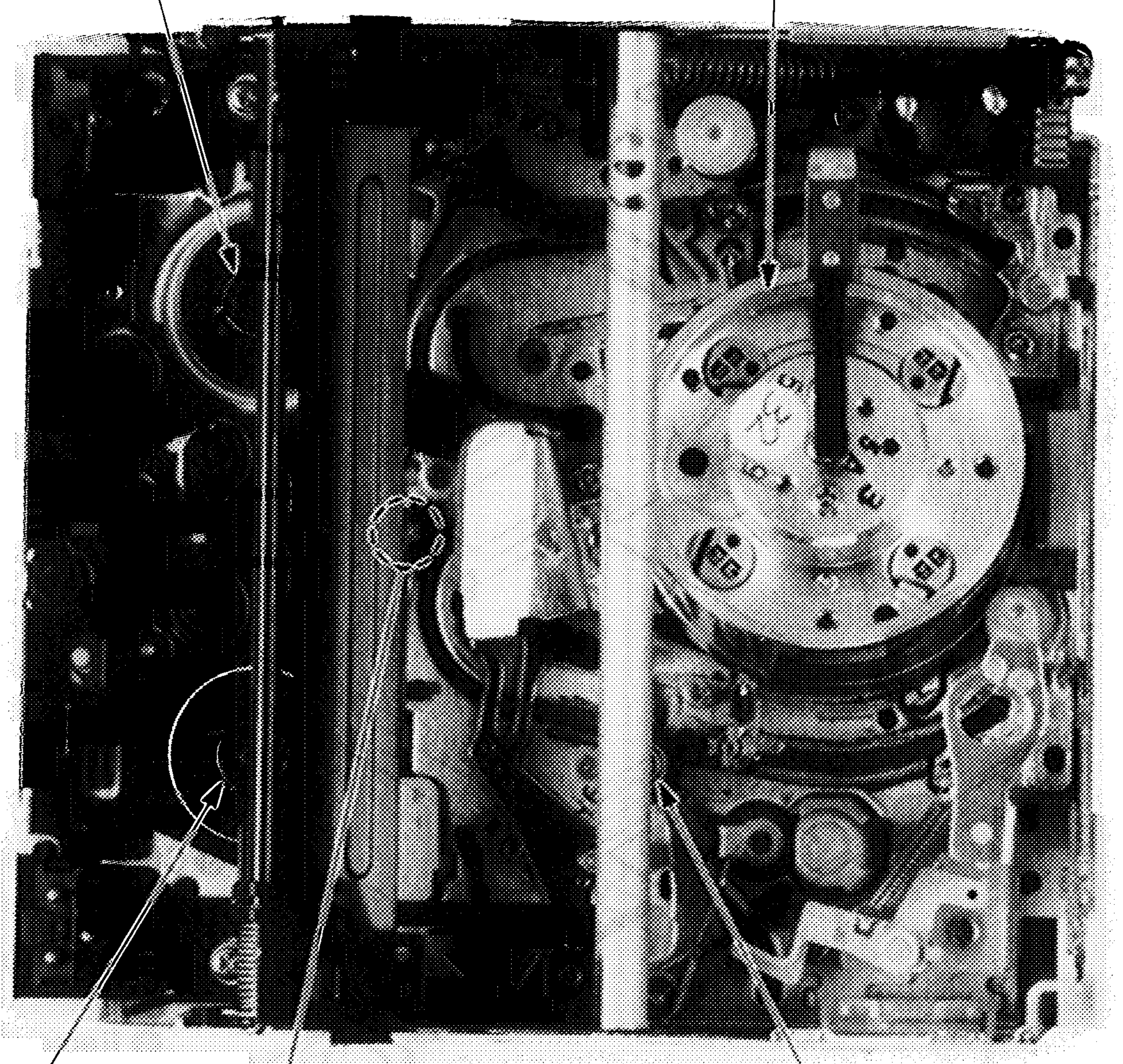
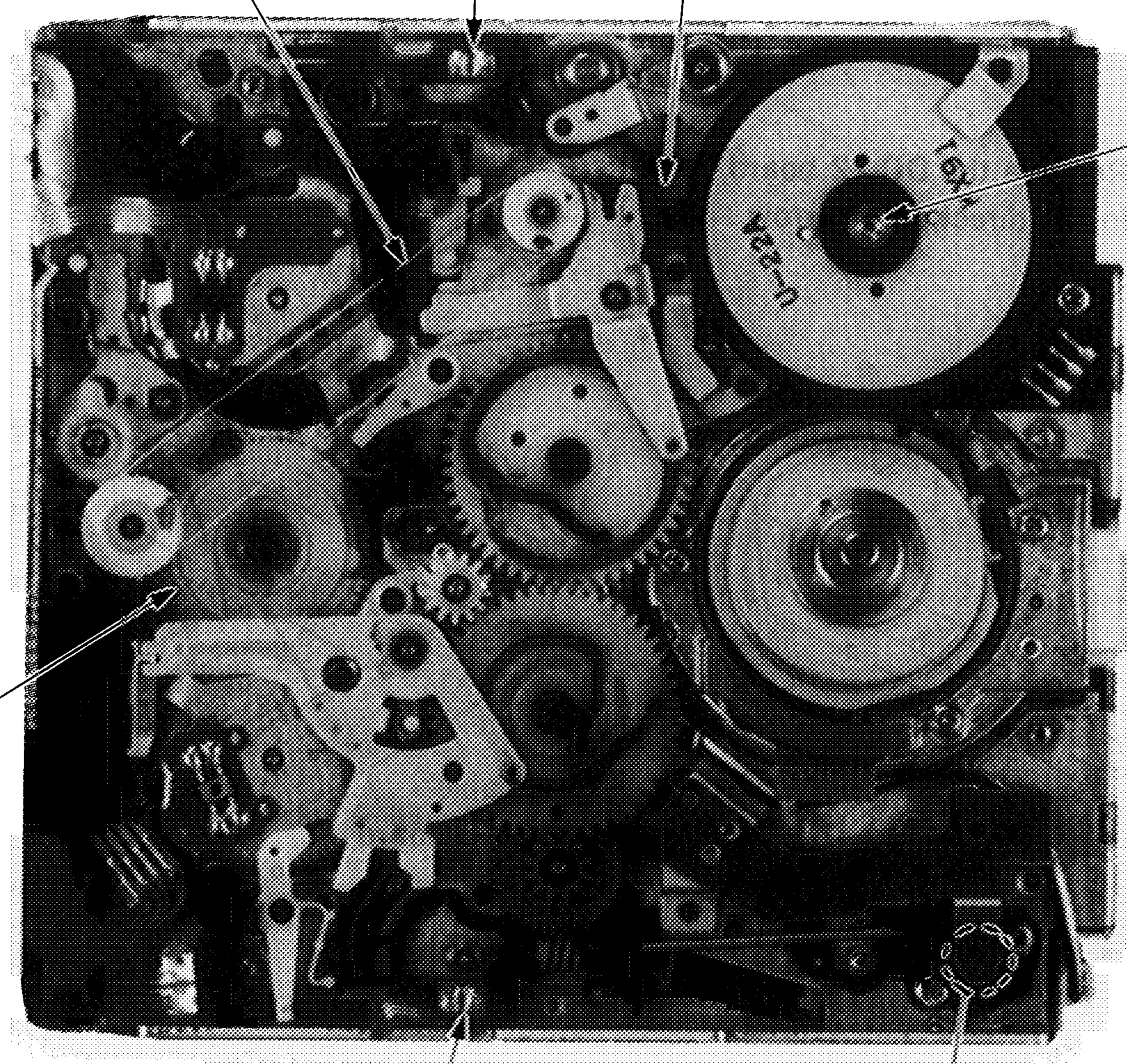


Table assy, reel, supply
X-3728-851-1
Table assy, reel, take-up
X-3728-855-1
Tape top/Tape end LED
(GL-452S)
8-719-940-81
ARM block assy, pinch
A-7040-219-A

— LOWER —


Tape top sensor
8-729-906-48
Belt (L), timing
3-741-197-01
Belt (S), timing
3-728-866-11
Capstan motor (M902)
8-835-331-01
Gear assy, RK
X-3728-866-1
Tape top sensor (EE-TP109)
8-729-906-48
Loading motor assy (M903)
A-7040-208-A

⑦ VIDEO DATA ADJUSTMENT MODE

Short the TEST D (Solder the split land at the lower part of the KB-10 board Q803)

The following display is shown on the LCD.

VIDEO DATA

CFL1	1	(RESET)
CFL2	1	(DISPLAY)
NCL1	1	(SLEEP)
NCL2	1	(NEXT)
NCLP1	1	(UP)
NCLP2	1	(CLOCK)

KB-10 BOARD (Component Side)

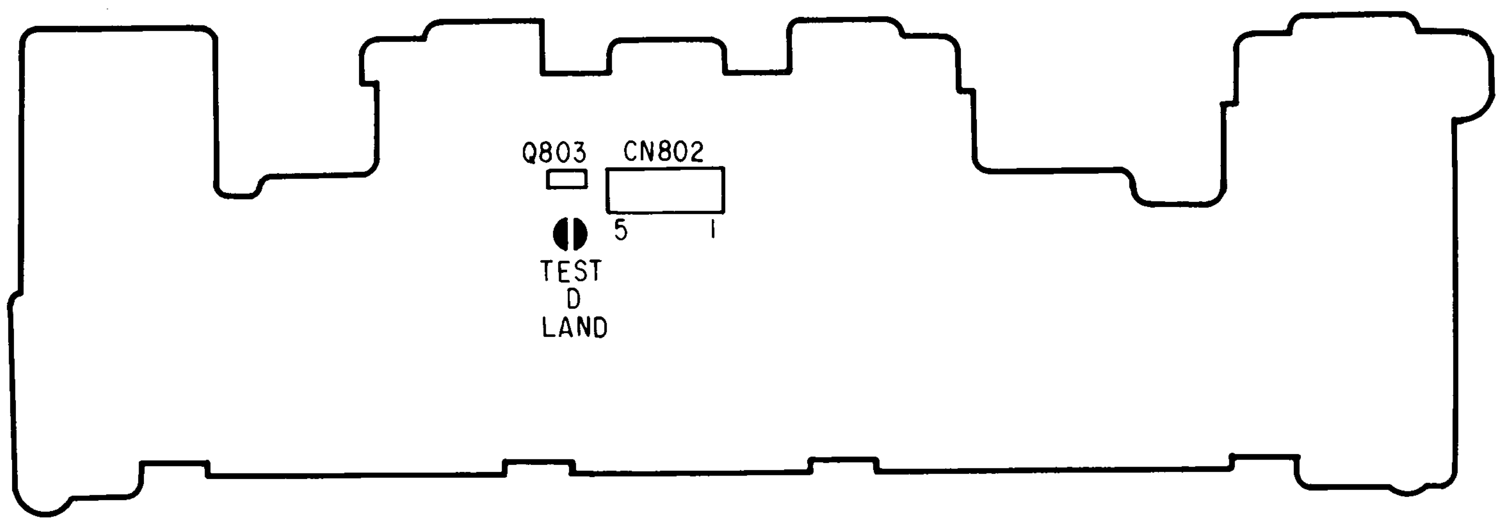


Fig3-2.

Six types of DATA are varied with the KEY on the SC part.

RESET ──→ COUNTER RESET KEY
DISPLAY ──→ DATA SCREEN KEY
SLEEP ──→ SLEEP KEY
NEXT ──→ NEXT KEY
UP ──→ + KEY
CLOCK ──→ CLOCK SET KEY

Pressing each KEY allows to rewrite DATA. ("0" is rewritten to "L", "1" is rewritten to "H".)

Eight modes are adjusted by the types of TAPE (ME, MP), recording (HI BAND, LO BAND) MODE, and TAPE SPEED (SP, LP).when the CH+KEY is pressed, the color of the display on the LCD turns to blue for few seconds from white and returns to white. The function to store the screen DATA in EEPROM is added by this operation. (See to the Table 3-1. for the data writing to EEPROM.)

Table 3-1. EE P ROM Write Data

TEST MODE						CFL1	CFL2	NCL1	NCL2	NCLP1	NCLP2
D	C	B	A	Switch position of the test mode set jig							
1	0	0	0	8	SP•MP	H	L	H	L	H	L
1	0	0	1	9	LP•MP	L	H	L	H	L	H
1	0	1	0	A	SP•ME	H	L	H	L	H	L
1	0	1	1	B	LP•ME	L	H	L	H	L	H
1	1	0	0	C	Hi-8 SP•MP	H	L	L	H	H	L
1	1	0	1	D	Hi-8 LP•MP	L	H	L	H	L	H
1	1	1	0	E	Hi-8 SP•ME	H	L	H	L	H	L
1	1	1	1	F	Hi-8 LP•ME	L	H	L	H	L	H

Note) When EEPROM is replaced, the following adjustment or write should be performed.

1. SW POSI adjustment
2. BATTERY DOWN adjustment
3. VIDEO DATA write
4. Channel preset

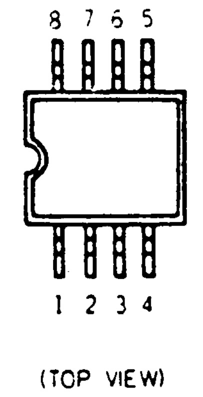
3-10. LIST OF SIRCS CODE (CATEGORY : VTR2)

CODE No.	CODE	COMMAND
01	00	CH-1/1
02	01	CH-2/2
03	02	CH-3/3
04	03	CH-4/4
05	04	CH-5/5
06	05	CH-6/6
07	06	CH-7/7
08	07	CH-8/8
09	08	CH-9/9
10	09	CH-10/0
11	0 A	CH-11/*
12	0 B	CH-12/CH/ENTER/#
13	0 C	CH-13/1−
14	0 D	CH-14/2−
17	10	CH-HIGH(+)
18	11	CH-LOW(−)
22	15	POWER ON/OFF
23	16	EJECT
24	17	MPX MAIN/SUB
25	18	STOP
26	19	PAUSE

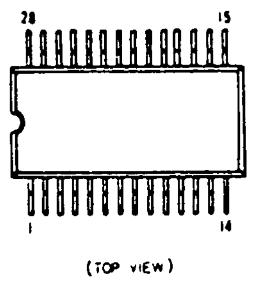
CODE No.	CODE	COMMAND
27	1 A	PB
28	1 B	REWIND
29	1 C	FF
30	1 D	REC
33	20	STILL
36	23	1/5 SLOW
47	2 E	POWER ON
48	2 F	POWER OFF
50	31	FORWARD
55	36	SLEEP
71	46	COUNTER RESET
72	47	MEM CNTR ON/OFF
73	48	INDEX WRITE
74	49	INDEX ERASE
80	4F	INPUT SELECT
85	54	INDEX ON/OFF
89	58	SPEED CHANGE
91	5A	COUNTER DISPLAY ON/OFF
97	60	TIMER SET
98	61	NEXT
102	65	TIMER REC

4-3. SEMICONDUCTORS

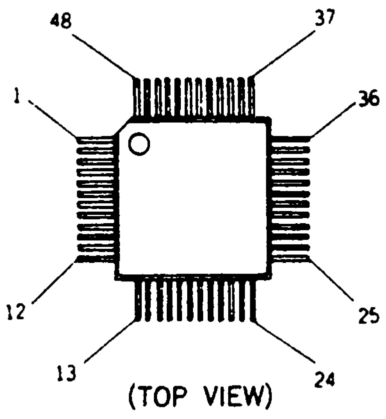
AK93C57F
FA7610N
LM311DR
LM358D
LM358PS
LM393DR
MC34182M
LM393ML
NJM2073M


8 7 6 5
1 2 3 4
(TOP VIEW)

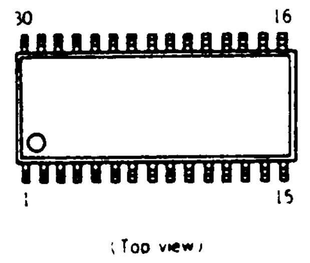
BA3570F
CXA1138M


28
15
1
14
(TOP VIEW)

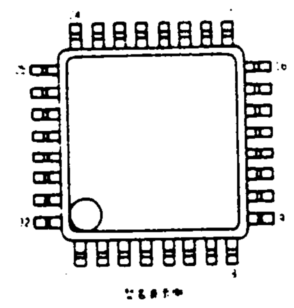
CXA1124AQ
CXA1208R
CXA1537R
MB606199


48
37
1
36
12
25
13
24
(TOP VIEW)

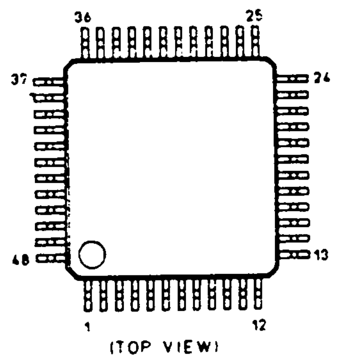
CXA1127M
CXA8006M


30
16
1
15
(Top view)

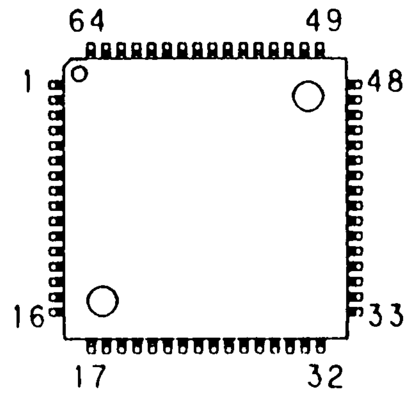
CXA1201Q



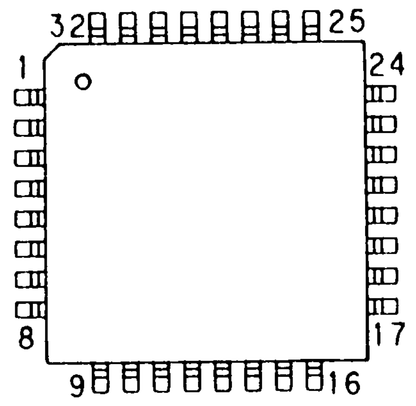
CXA1202R


36
25
37
24
48
13
1
12
(TOP VIEW)

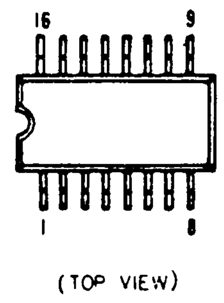
CXA1207R


64
49
1
48
16
33
17
32

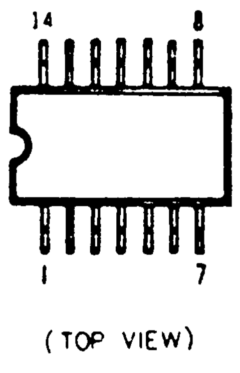
CXD2106Q


32
25
1
24
8
17
9
16

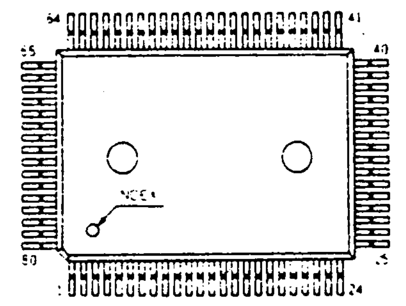
CXD2107M
CX20115A
MB3775PF
MC14053BF


16
9
1
8
(TOP VIEW)

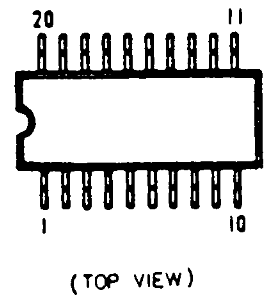
CXL5502M
μPC339G2
μPD6451AGT-601


14
8
1
7
(TOP VIEW)

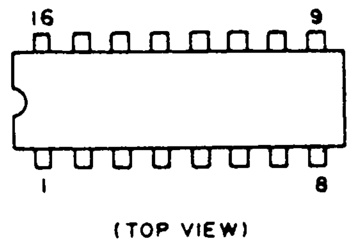
CXP50116
CXP80116
MC14094BF


64
41
65
40
80
25
1
24

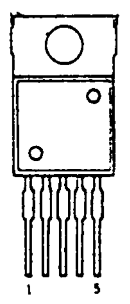
CX20102
M52018FP


20
11
1
10
(TOP VIEW)

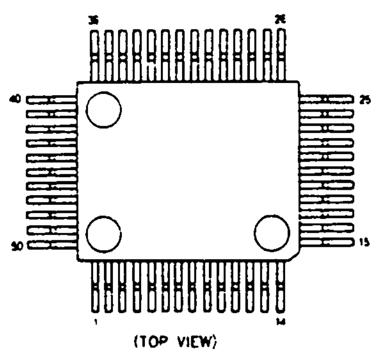
MC10H116M


16
9
1
8
(TOP VIEW)

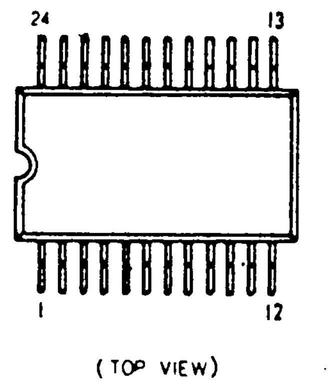
MC14052BF



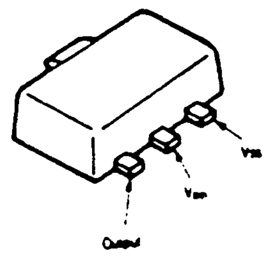
M51406FP



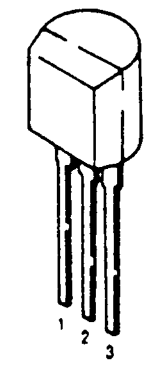
M52007FP


24
13
1
12
(TOP VIEW)

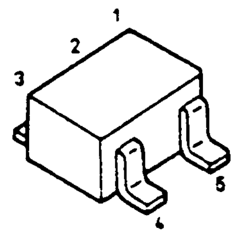
S-8052ALO-LG-S
S-8054-ALR-LN-S



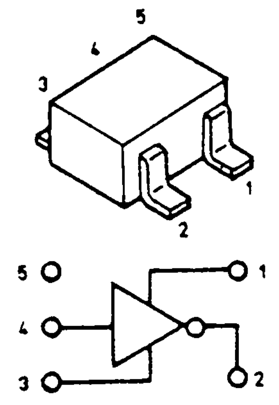
S-81350AG



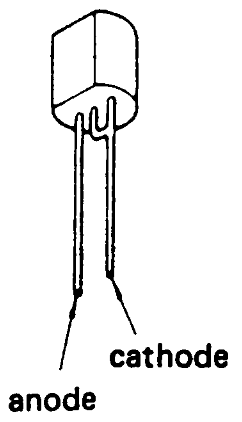
TC4SU69F
TC4S66F
TC4S81F



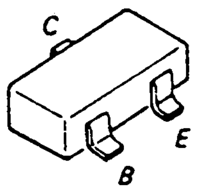
TC7S00F


5
4
3
1
2
5
1
4
3
2

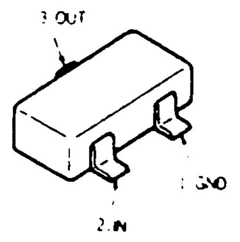
μPC574J


cathode
anode

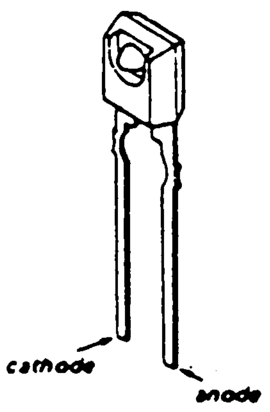
DTA114EK
DTA124EK
DTA143EK
DTA144EK
DTC114EK
DTC124EK
DTC144EK
2SA1037K
2SA1162
2SA1576
2SB624
2SC1623
2SC2412K
2SC3053
2SC3326N
2SC4081



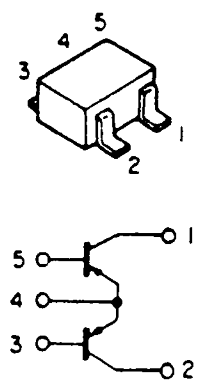
DTA114EU
DTA144EU
DTC124EU
DTC143EU
DTC144EU
DTC144TU
DTC144WU
2SD1119


3 OUT
2 IN
GND

EE-TP109


cathode
anode

FMS1
FMY3
FMY4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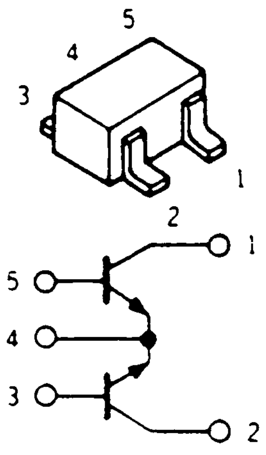
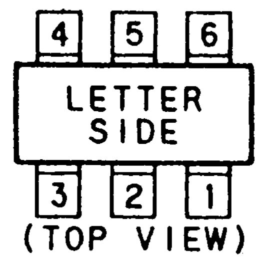
4
3
2
1
5
1
4
3
2

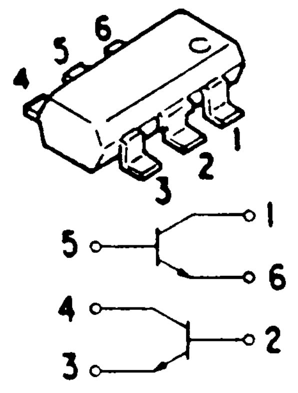
FMW1
FMW2


5
4
3
1
2
5
1
4
3
2

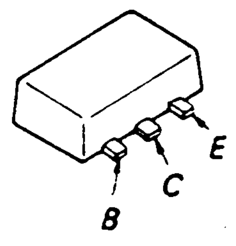
IMH2
IMX2


4
5
6
LETTER SIDE
3
2
1
(TOP VIEW)

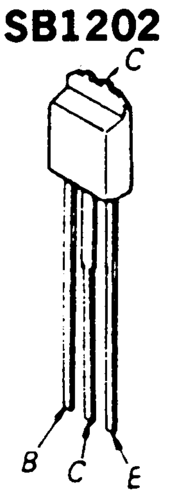
XN4210


6
5
4
1
2
3
5
1
6
4
3
2

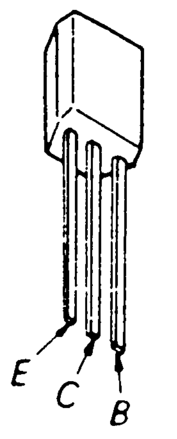
2SB1121



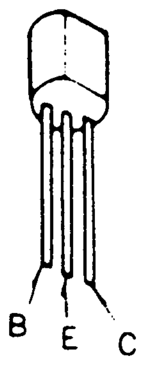
2SB1202



2SC2669



2SC3355



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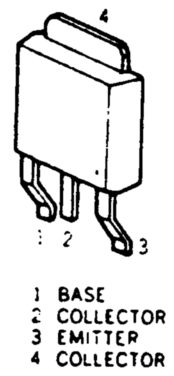
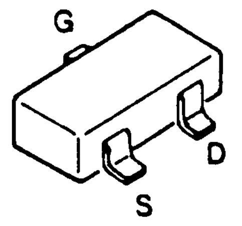
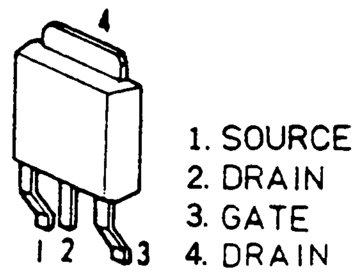

4
1
2
3
1 BASE
2 COLLECTOR
3 EMITTER
4 COLLECTOR

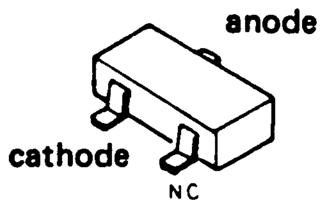
2SK209G



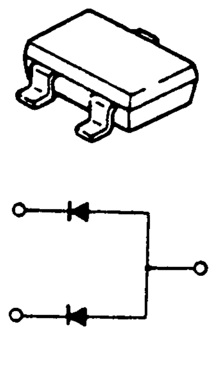
2SK1469


4
1
2
3
1. SOURCE
2. DRAIN
3. GATE
4. DRAIN

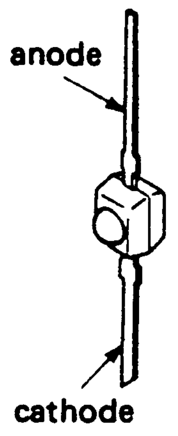
DAN202U


anode
cathode
NC

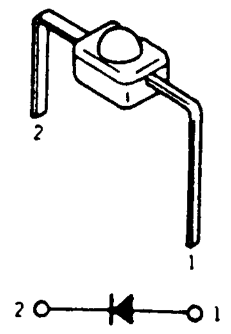
DAP202U



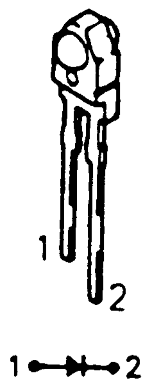
GL-1EG11


anode
cathode

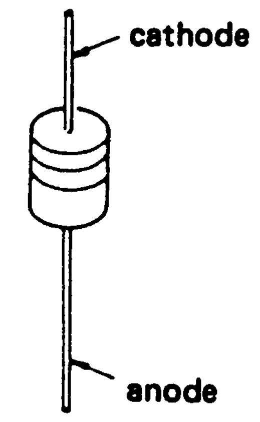
GL-1PR102



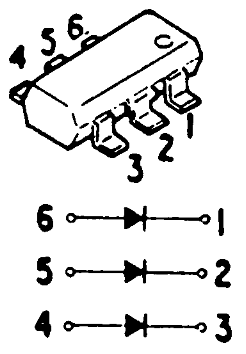
GL452S



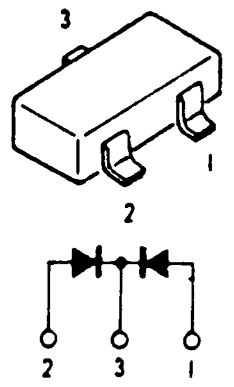
HZS12A1L
1SS119


cathode
anode

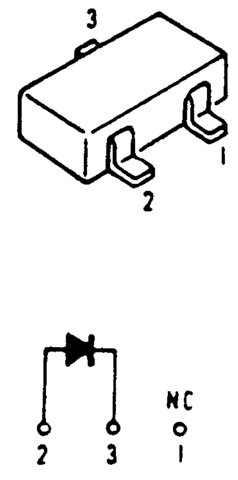
IMN10
MA121


4
5
6
1
2
3
6
1
5
2
4
3

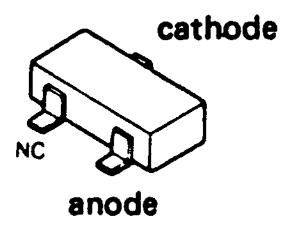
MA152WK



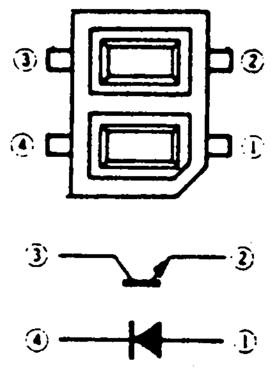
RD3.6M-B2
RD5.1M-B2
RD5.6M-B2
RD6.2M-B1
RD9.1M-B1
RD9.1M-B2
SB05-05CP



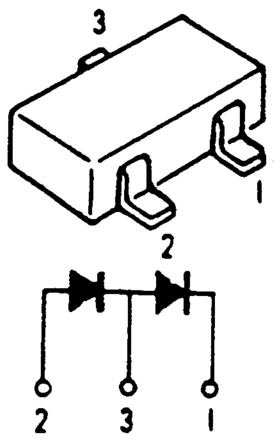
SB10-05CP


cathode
NC
anode

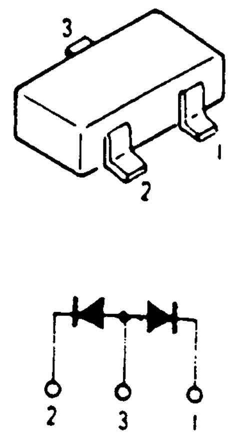
TLP-907



1SS226



1S2836



SECTION 5
EXPLODED VIEWS

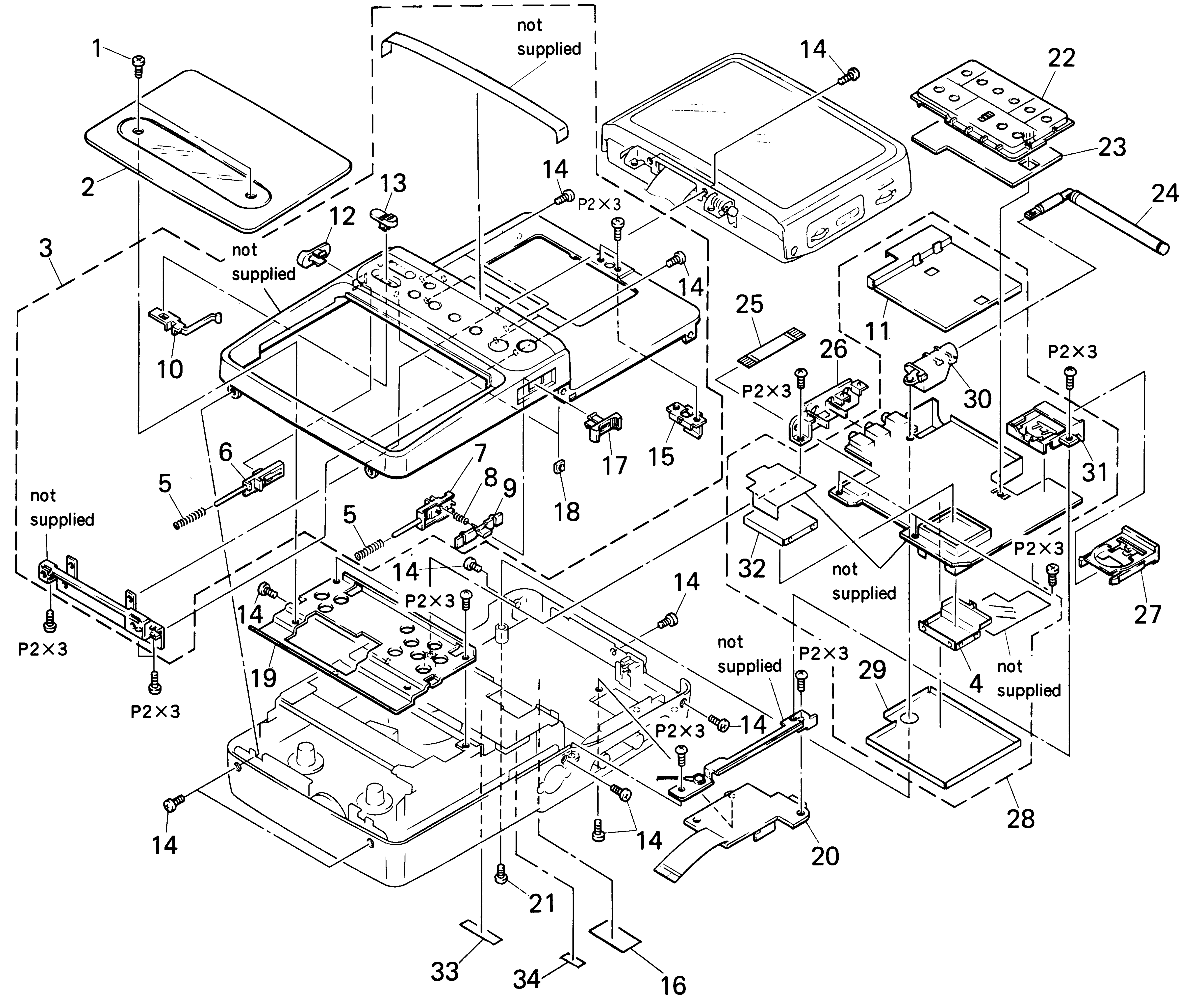
NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- The construction parts of an assembled part are indicated with a collation number in the remark column.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

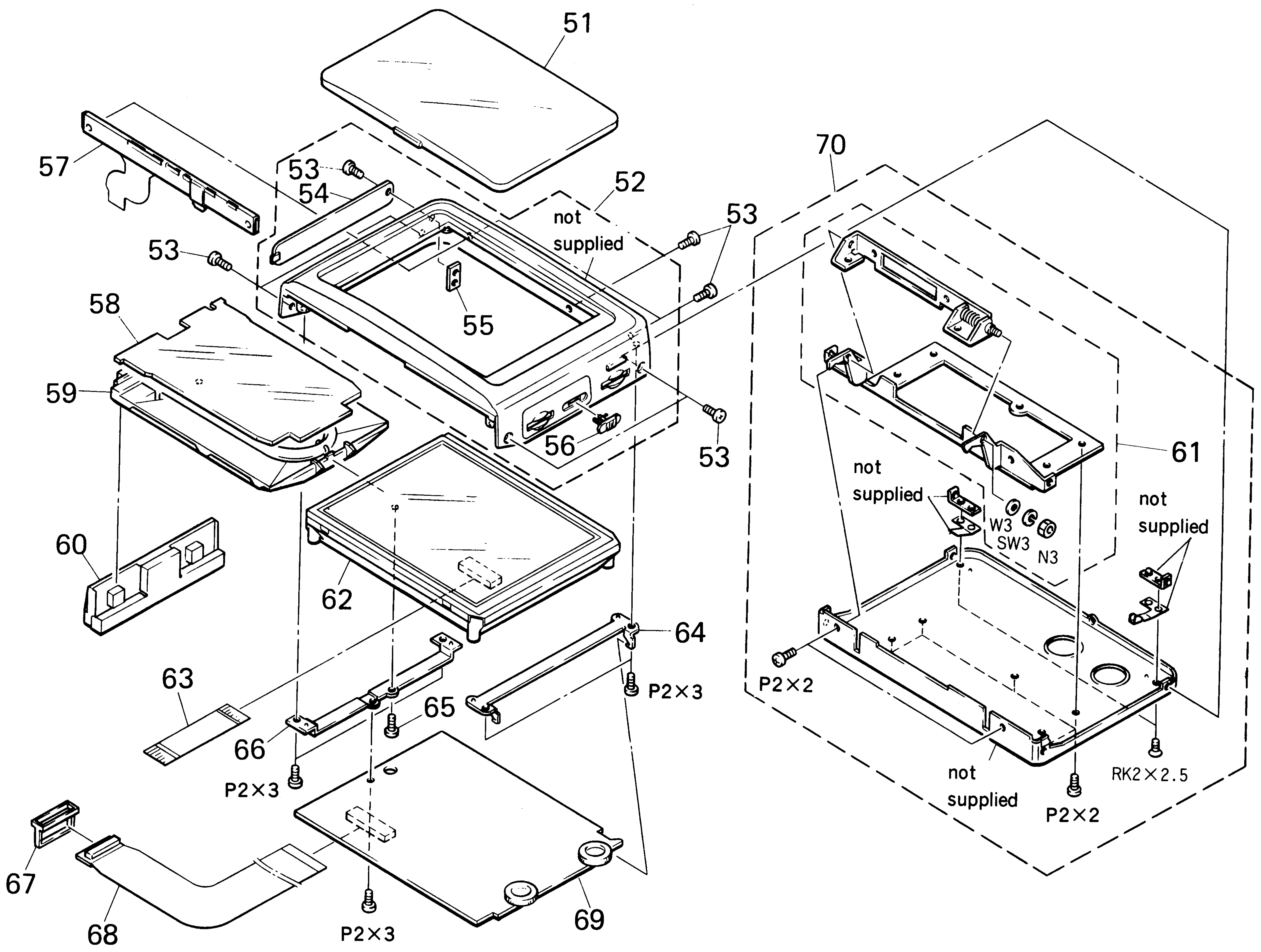
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifé.

5-1. CABINET (UPPER) ASSEMBLY



Ref.No	Part No.	Description	Remark
1	3-719-555-11	SCREW (M1.7X5.5)	
2	X-3728-871-1	LID ASSY, CASSETTE COMPARTMENT	
3	X-3749-097-1	CABINET ASSY, UPPER	5-10, 12-18
4	3-746-907-01	LID, TDD SHIELD CASE	
5	3-741-137-01	SPRING, COMPRESSION	
6	3-740-655-01	BUTTON, EJECT LOCK	
7	3-744-133-01	PLATE, SLIDE, POWER	
8	3-303-973-00	SPRING, COMPRESSION	
9	3-744-128-01	BUTTON, POWER LOCK	
10	3-744-132-01	PLATE, SLIDE, REC	
11	X-3728-886-1	LID ASSY, TU SHIELD CASE	
12	3-740-647-01	BUTTON, EJECT	
13	3-740-648-11	BUTTON, POWER	
14	3-719-381-01	SCREW (M2X4)	
15	X-3940-043-1	PLATE, LOCK ASSY	
16	*3-749-513-01	LABEL, MODEL NUMBER (U/C)	
17	3-744-131-01	BUTTON, POWER	
18	3-718-233-01	NUT, PLATE	
19	X-3728-890-1	REINFORCEMENT ASSY	
20	*A-7071-210-A	DC-22 (A) BOARD, COMPLETE	
21	3-719-381-21	SCREW (M2X6)	
22	X-3749-096-1	HOLDER ASSY, SB	
23	*1-634-346-11	SB-3 BOARD	
24	1-501-456-11	ANTENNA, TELESCOPIC	
25	1-575-856-11	CABLE,FLAT(1.0MM PITCH) 7 CORE	
26	3-744-165-01	COVER, HP JACK	
27	X-3728-883-1	HOLDER ASSY, BATTERY	
28	*A-7062-317-A	TU-123 BOARD, COMPLETE	4, 11, 29-32
29	3-746-915-01	LID, REAR, TU SHIELD CASE	
30	3-744-166-01	HOLDER, ANTENNA	
31	X-3728-887-1	GUIDE ASSY, BATTERY	
32	3-746-908-01	LID, REAR, TDD SHIELD CASE	
33	*3-704-386-01	LABEL, TELESONIC	
34	*3-704-367-01	LABEL	

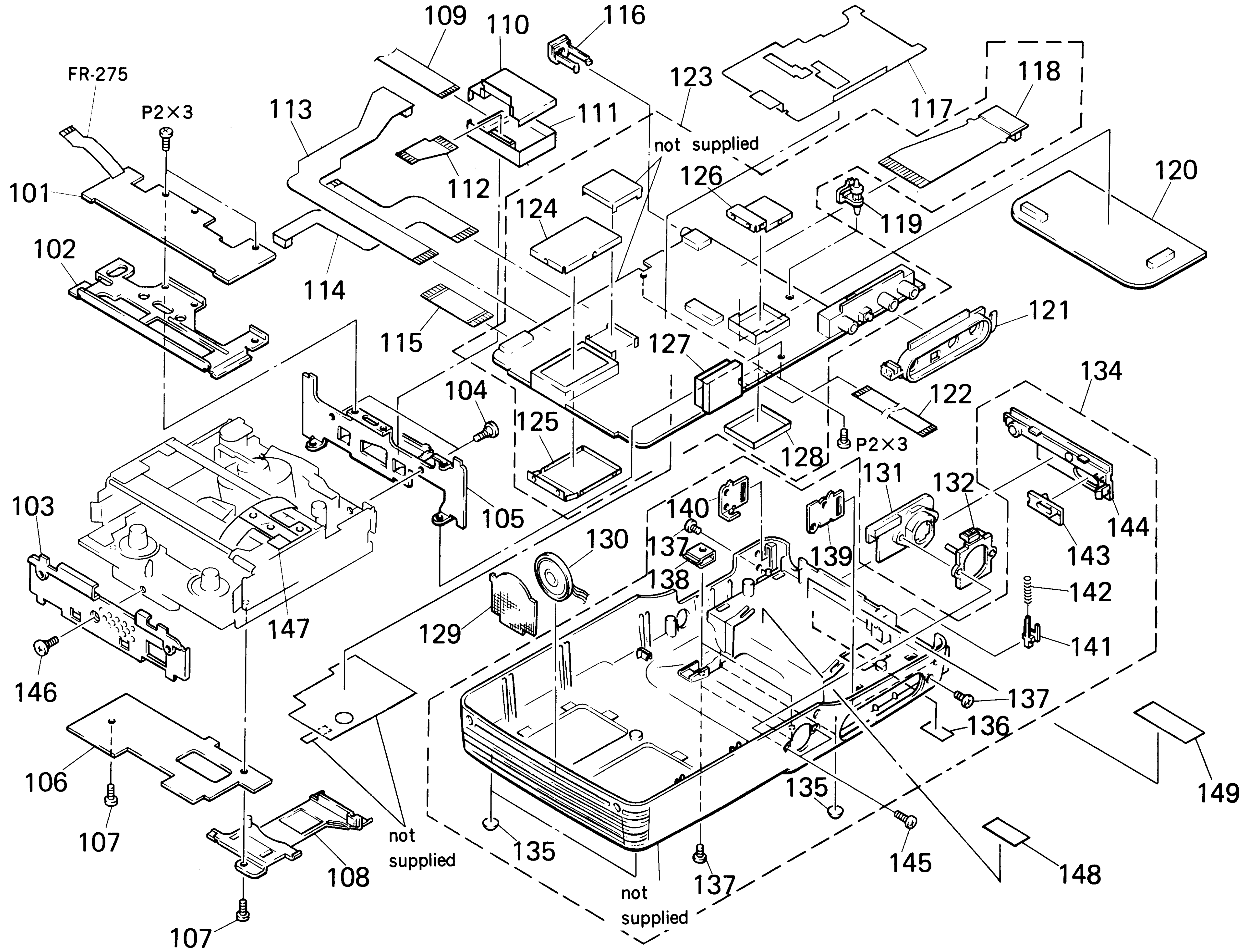
5-2. SC UNIT ASSEMBLY


51
57
53
54
52
not supplied
53
70
53
58
55
59
56
53
61
not supplied
W3
SW3
N3
not supplied
60
62
64
P2×3
63
65
66
P2×2
P2×3
not supplied
RK2×2.5
P2×2
67
68
P2×3
69

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No	Part No.	Description	Remark
51	3-744-142-01	WINDOW, SC	
52	X-3728-878-1	CABINET ASSY, UPPER, SC	
53	3-719-381-01	SCREW (M2X4)	
54	3-744-174-01	COVER, SIDE	
55	3-730-103-01	NUT, PLATE	
56	3-744-162-01	KNOB, DBB	
57	1-466-334-11	SWITCH BLOCK, CONTROL	
58	3-744-127-01	CURTAIN	
59	1-518-668-11	TUBE UNIT, FLUORECENT (BL901)	
60	⚠.1-466-333-11	INVERTER UNIT, DC-AC	
61	X-3749-223-1	ARM, HINGE ASSY	
62	1-809-002-11	DISPLAY MODULE, LIQUID CRYSTAL (LCD 901)	
63	1-575-858-11	CABLE,FLAT(1.0MM PITCH)16 CORE (LCD FLEXIBLE)	
64	*3-744-198-01	BRACKET (R), LCD	
65	3-719-408-01	SCREW (B2), TAPPING, P3	
66	*3-744-199-01	BRACKET (L), LCD	
67	3-744-152-01	HOLDER, FPC	
68	1-634-994-11	FP-271 FLEXIBLE BOARD	
69	*A-7061-937-A	RG-8 BOARD, COMPLETE	
70	X-3728-882-1	CABINET (BOTTOM) ASSY, SC	61

5-3. CABINET (LOWER) ASSEMBLY



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FR-275
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not supplied
135
not supplied
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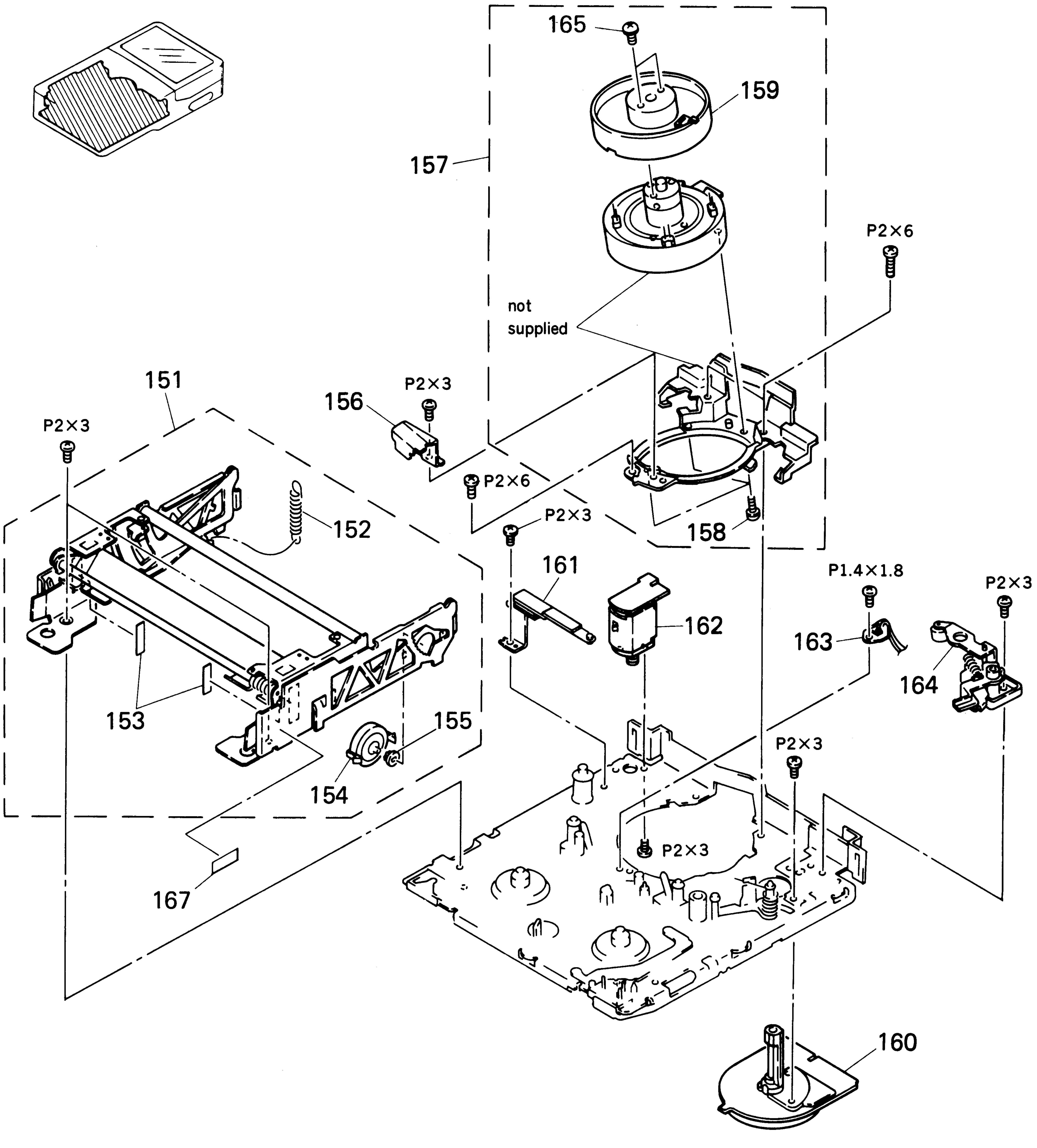
Ref.No	Part No.	Description	Remark
101	*A-7071-211-A	KB-10 (A) BOARD, COMPLETE	
102	X-3728-889-1	FRAME ASSY, KB	
103	X-3728-884-1	FRAME (FRONT) ASSY, MD	
104	3-732-791-11	SCREW (M2X3)	
105	X-3728-891-1	FRAME (REAR) ASSY, MD	
106	*1-634-347-11	UC-6 BOARD	
107	3-719-408-01	SCREW (B2), TAPPING, P3	
108	*3-744-176-01	COVER, MD	
109	1-634-992-11	FP-269 FLEXIBLE BOARD	
110	X-3728-885-1	LID ASSY, RP SHIELD CASE	
111	A-7061-932-A	RP-75 BOARD, COMPLETE	
112	1-634-996-11	FP-273 FLEXIBLE BOARD	
113	1-634-997-11	FP-274 FLEXIBLE BOARD	
114	1-634-995-11	FP-272 FLEXIBLE BOARD	
115	1-575-859-11	CABLE,FLAT(1.0MM PITCH)15 CORE	
116	3-744-169-01	COVER, CS JACK	
117	*3-746-901-01	COVER, SV	
118	1-634-993-11	FP-270 FLEXIBLE BOARD	
119	3-742-816-01	SUPPORT (V), PC BOARD	
120	*A-7062-315-A	AU-53 (A) BOARD, COMPLETE	
121	3-744-175-01	COVER, IO JACK	
122	1-575-857-11	CABLE,FLAT(1.0MM PITCH)12 CORE	
123	*A-7062-316-A	SV-38 (A) BOARD, COMPLETE	118, 124-128
124	*3-746-902-01	CASE (LID), SHIELD, SDD	
125	*X-3728-888-1	LID ASSY, REAR,SDD SHIELD CASE	
126	*3-746-903-01	CASE (LID), SHIELD, INDEX	
127	A-7061-935-A	CC-32 BOARD, COMPLETE	
128	*X-3728-893-1	CASE (REAR LID) ASSY, SHIELD	
129	X-3728-892-1	SPACER ASSY, SP	
130	1-544-323-11	SPEAKER	
131	*1-634-345-11	CN-6 BOARD	
132	3-744-157-01	SPACER, CN	
134	X-3749-098-1	CABINET ASSY, LOWER	135-144
135	3-740-607-01	CUSHION	
136	*3-747-370-01	LABEL, BATTERY FITTING	
137	3-719-381-01	SCREW (M2X4)	
138	3-736-496-01	BRACKET, STAND	
139	3-744-156-01	HOOK (R), BELT	
140	3-744-155-01	HOOK (L), BELT	
141	3-744-159-01	LEVER, RELEASE	
142	3-564-951-00	SPRING, COMPRESSION	
143	3-744-161-01	KNOB, RELEASE	
144	3-744-168-01	COVER, ANTENNA	
145	3-719-381-21	SCREW (M2X6)	
146	3-744-603-11	SCREW	
147	3-746-960-01	RIBBON, LID RETAINER	
148	*3-719-611-41	LABEL, FUSE RATING	
149	*3-704-256-01	LABEL, CAUTION	

5-4. MECHANISM DECK ASSEMBLY (1)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P2×3
P2×3
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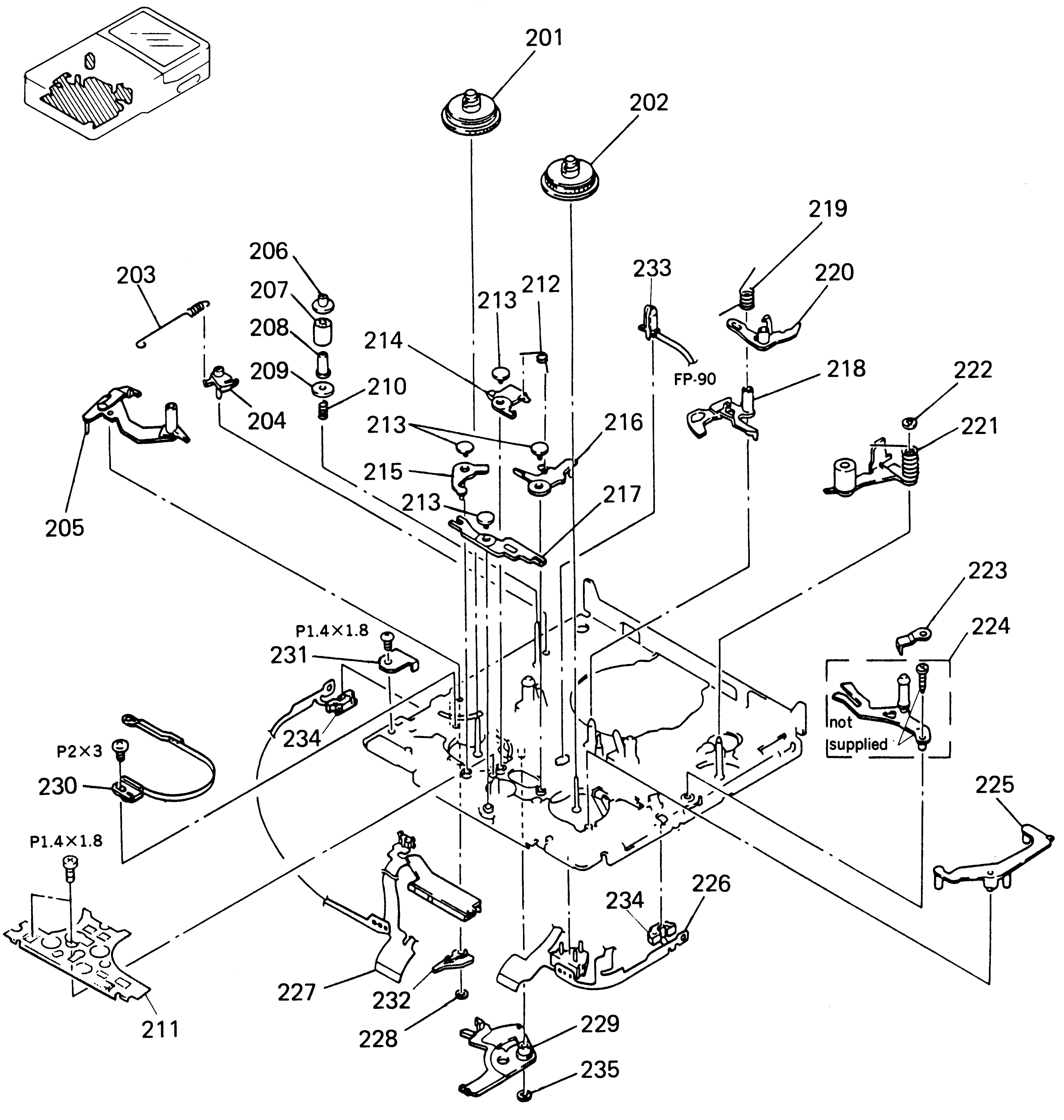
Ref.No	Part No.	Description	Remark
151	X-3728-873-1	CASSETTE COMPARTMENT ASSY	152-155
152	3-728-825-03	SPRING, TENSION	
153	*3-728-829-01	TAPE	
154	3-728-867-02	DAMPER, OIL	
155	3-728-828-02	GEAR, DAMPER	
156	3-728-868-01	GUARD, GUIDE	
157	A-7048-382-A	DRUM ASSY, (DGU-69A-R)	158, 159, 165
158	3-686-493-01	SCREW, (M2X5), P1	
159	A-7049-324-A	DRUM ASSY, ROTARY (UPPER)(DGR-69-R)	
160	8-835-331-01	MOTOR, DC U-22A (CAPSTAN)(M902)	
161	X-3728-864-1	GROUND ASSY, SHAFT	
162	A-7040-208-A	MOTOR ASSY, THREADING (LOADING) (M903)	
163	1-808-505-12	SENSOR (DEW)	
164	A-7040-207-A	ROLLER BLOCK ASSY, HC	
165	3-727-847-01	SCREW (M2X4)	
167	*3-730-176-01	SHEET, MD	

5-5. MECHANISM DECK ASSEMBLY (2)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FP-90
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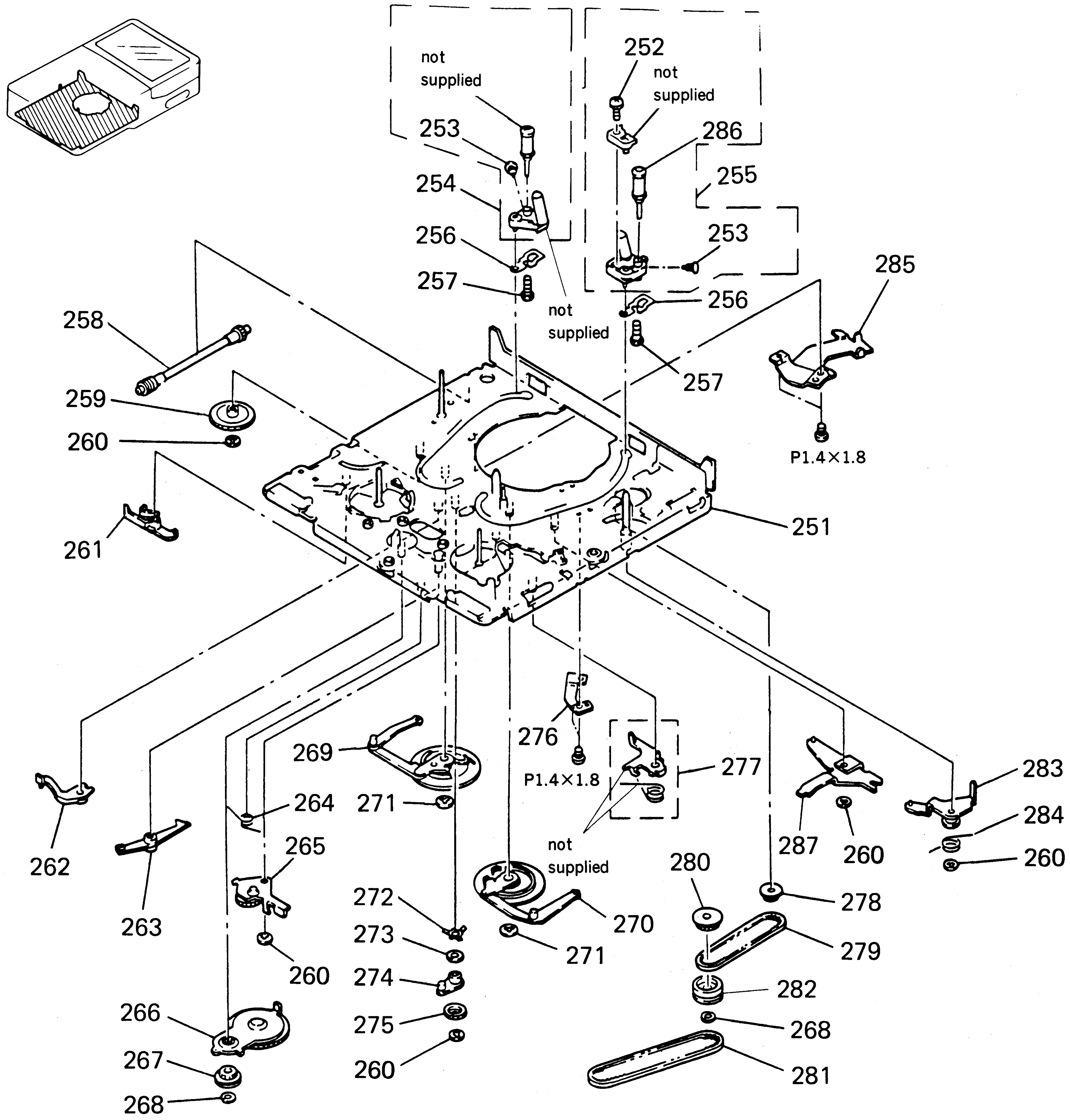
Ref.No	Part No.	Description	Remark
201	X-3728-851-1	TABLE ASSY, REEL, S	
202	X-3728-855-1	TABLE ASSY, REEL, T	
203	3-736-414-01	SPRING, TENSION	
204	3-728-855-03	ARM, ADJUSTMENT	
205	X-3728-867-1	ARM ASSY (S),TENSION REGULATOR	
206	3-726-884-01	FLANGE, UPPER, TG2	
207	3-726-883-01	ROLLER, TG2	
208	3-726-885-01	SLEEVE, TG2	
209	3-726-882-02	FLANGE, LOWER, TG2	
210	3-726-886-01	SPRING, COMPRESSION	
211	3-741-195-01	PLATE, BLIND, RK	
212	3-726-866-01	SPRING (ST), TORSION	
213	3-726-858-01	PIN, SHAFT RETAINER	
214	3-728-849-01	BRAKE, S	
215	3-726-852-01	BRAKE, LB	
216	3-728-850-01	BRAKE, T	
217	3-726-853-01	LEVER, LB	
218	3-728-875-01	STOPPER, RK	
219	3-726-864-01	SPRING (RK), TORSION	
220	3-728-852-02	ARM, RK STOPPER	
221	A-7040-219-A	ARM BLOCK ASSY, PINCH	
222	3-669-465-00	WASHER (1.5), STOPPER	
223	3-728-808-01	SPRING, LEAF	
224	X-3728-869-1	ARM ASSY, TG7	
225	3-728-848-01	ARM, LB RELEASE	
226	1-628-061-12	FP-90 FLEXIBLE BOARD	
227	1-628-060-12	FP-89 FLEXIBLE BOARD	
228	3-321-393-11	WASHER, STOPPER	
229	X-3728-863-1	LEVER ASSY, SW	
230	X-3728-859-1	BAND ASSY, TENSION REGULATOR	
231	3-730-125-01	RETAINER, SW	
232	X-3728-857-1	STOPPER ASSY,TENSION REGULATOR	
233	3-728-837-01	HOLDER, LED	
234	3-728-869-02	HOLDER, SENSOR	
235	3-726-829-01	WASHER, STOPPER	

5-6. MECHANISM DECK ASSEMBLY (3)



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Ref.No	Part No.	Description	Remark
251	X-3728-862-1	CHASSIS ASSY, MECHANICAL	
252	3-736-473-01	SCREW (M2X0.25)(THREE LOCK)	
253	3-726-822-01	SCREW (M1.4X2) (STEP), HEAD	
254	A-7040-204-A	COASTER (LEFT) BLOCK ASSY	253
255	A-7040-215-A	COASTER (RIGHT)BLOCK ASSY(N1S)	252, 253, 286
256	3-736-485-01	SPRING, LEAF, COSTER	
257	3-726-830-01	SCREW (M1.4X4) (THREE LOCK)	
258	X-3728-868-1	WORM ASSY	
259	3-744-109-01	GEAR, WHEEL	
260	3-726-829-01	WASHER, STOPPER	
261	3-728-842-01	LEVER, EJECT	
262	3-728-851-01	BRAKE, UL	
263	3-726-854-01	ARM, BRAKE RELEASE	
264	3-726-865-01	SPRING (LB), TORSION	
265	A-7040-225-A	GEAR BLOCK ASSY (N), LB	
266	X-3728-866-1	GEAR ASSY, RK	
267	X-3728-858-1	GEAR ASSY, RC	
268	3-321-393-11	WASHER, STOPPER	

Ref.No	Part No.	Description	Remark
269	X-3728-842-1	GEAR (LEFT) ASSY, DRIVE	
270	X-3728-843-1	GEAR (RIGHT) ASSY, DRIVE	
271	3-669-465-00	WASHER (1.5), STOPPER	
272	3-726-867-01	SPRING, LEAF	
273	3-701-436-21	WASHER, POLYEHTHYLENE	
274	3-726-857-02	ARM, UL	
275	3-726-856-02	GEAR, UL	
276	*3-726-805-01	REINFORCEMENT (TT)	
277	X-3726-808-2	BRAKE ASSY, TS	
278	X-3726-805-1	GEAR ASSY, JOINT	
279	3-728-866-11	BELT (S), TIMING	
280	X-3726-838-1	PULLEY (UPPER) ASSY, MIDWAY	
281	3-741-197-01	BELT (L), TIMING	
282	3-741-196-01	PULLEY (LOWER), BELT MIDWAY	
283	X-3726-824-1	ARM ASSY, PINCH SUB	
284	3-726-895-01	SPRING	
285	X-3726-841-1	REINFORCEMENT (SS) ASSY	
286	X-3728-808-1	ROLLER ASSY (U) (SUS), GUIDE	
287	X-3728-846-1	LEVER ASSY, THREADING	

SECTION 6
ELECTRICAL PARTS LIST

RP-75

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF: μF, PF: μμF.

RESISTORS
- All resistors are in ohms.
- F: nonflammable

COILS
- MMH: mH, UH: μH

SEMICONDUCTORS
In each case, U: μ, for example:
UA...: μA..., UPA...: μPA...,
UPC...: μPC, UPD...: μPD...

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
	A-7061-932-A	RP-75 BOARD, COMPLETE ******************	(Ref. No. 1000 series)
	1-634-992-11	FP-269 FLEXIBLE BOARD	
		CAPACITOR	
C501	1-135-180-21	TANTAL. CHIP 3.3MF 20% 6.3V	
C502	1-164-361-11	CERAMIC CHIP 0.047MF 16V	
C503	1-135-161-21	TANTAL. CHIP 22MF 20% 10V	
C504	1-164-361-11	CERAMIC CHIP 0.047MF 16V	
C505	1-135-161-21	TANTAL. CHIP 22MF 20% 10V	
C506	1-164-361-11	CERAMIC CHIP 0.047MF 16V	
C507	1-162-974-11	CERAMIC CHIP 0.01MF 50V	
C508	1-162-970-11	CERAMIC CHIP 0.01MF 10% 25V	
C509	1-164-005-11	CERAMIC CHIP 0.47MF 25V	
C510	1-164-633-11	CERAMIC CHIP 0.1MF 10% 25V	
C511	1-164-633-11	CERAMIC CHIP 0.1MF 10% 25V	
C512	1-164-633-11	CERAMIC CHIP 0.1MF 10% 25V	
C513	1-164-633-11	CERAMIC CHIP 0.1MF 10% 25V	
C514	1-164-005-11	CERAMIC CHIP 0.47MF 25V	
C515	1-162-970-11	CERAMIC CHIP 0.01MF 10% 25V	
C516	1-162-974-11	CERAMIC CHIP 0.01MF 50V	
C517	1-162-974-11	CERAMIC CHIP 0.01MF 50V	
C518	1-162-974-11	CERAMIC CHIP 0.01MF 50V	
C519	1-162-974-11	CERAMIC CHIP 0.01MF 50V	
C522	1-135-161-21	TANTAL. CHIP 22MF 20% 10V	
C523	1-164-360-11	CERAMIC CHIP 0.1MF 16V	
C524	1-162-974-11	CERAMIC CHIP 0.01MF 50V	
C525	1-164-360-11	CERAMIC CHIP 0.1MF 16V	
C529	1-164-361-11	CERAMIC CHIP 0.047MF 16V	
C531	1-162-974-11	CERAMIC CHIP 0.01MF 50V	
C533	1-135-161-21	TANTAL. CHIP 22MF 20% 10V	
C534	1-164-361-11	CERAMIC CHIP 0.047MF 16V	
C535	1-135-157-21	TANTAL. CHIP 10MF 20% 6.3V	
C550	1-164-227-11	CERAMIC CHIP 0.022MF 10% 25V	
C582	1-162-974-11	CERAMIC CHIP 0.01MF 50V	
C583	1-162-964-11	CERAMIC CHIP 0.001MF 10% 50V	
C584	1-162-953-11	CERAMIC CHIP 100PF 5% 50V	
C585	1-162-953-11	CERAMIC CHIP 100PF 5% 50V	
C586	1-162-955-11	CERAMIC CHIP 150PF 5% 50V	
C587	1-162-952-11	CERAMIC CHIP 82PF 5% 50V	
		CONNECTOR	
CN501	1-565-849-11	SOCKET, CONNECTOR 11P	
CN502	1-568-740-11	CONNECTOR, FPC (1.0MM)(ZIF)18P	
CN503	1-568-340-41	CONNECTOR, BOARD TO BOARD 5P	
		DIODE	
D550	8-719-941-86	DIODE DAN202U	
		IC	
IC501	8-752-033-38	IC CXA1202R	

Ref.No	Part No.	Description	Remark
		COIL	
L501	1-412-029-11	INDUCTOR CHIP 10UH	
L502	1-412-033-11	INDUCTOR CHIP 220UH	
L503	1-412-033-11	INDUCTOR CHIP 220UH	
L581	1-412-198-11	INDUCTOR 220UH	
L582	1-412-006-31	INDUCTOR CHIP 10UH	
		TRANSISTOR	
Q501	8-729-905-12	TRANSISTOR DTA144EU	
Q550	8-729-905-18	TRANSISTOR DTC144EU	
Q551	8-729-905-23	TRANSISTOR 2SA1576R	
Q581	8-729-905-23	TRANSISTOR 2SA1576R	
Q582	8-729-216-22	TRANSISTOR 2SA1162	
Q583	8-729-905-23	TRANSISTOR 2SA1576R	
		RESISTOR	
R502	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R503	1-216-838-11	METAL GLAZE 27K 5% 1/16W	
R504	1-216-838-11	METAL GLAZE 27K 5% 1/16W	
R505	1-216-838-11	METAL GLAZE 27K 5% 1/16W	
R506	1-216-838-11	METAL GLAZE 27K 5% 1/16W	
R507	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R509	1-216-839-11	METAL GLAZE 33K 5% 1/16W	
R510	1-216-831-11	METAL GLAZE 6.8K 5% 1/16W	
R512	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R514	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R515	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R516	1-216-841-11	METAL GLAZE 47K 5% 1/16W	
R517	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R520	1-216-791-11	METAL GLAZE 3.3 5% 1/16W	
R524	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R525	1-216-809-11	METAL GLAZE 100 5% 1/16W	
R526	1-216-809-11	METAL GLAZE 100 5% 1/16W	
R551	1-216-820-11	METAL GLAZE 820 5% 1/16W	
R552	1-216-865-11	METAL GLAZE 3K 5% 1/16W	
R553	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R554	1-216-823-11	METAL GLAZE 1.5K 5% 1/16W	
R555	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R556	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R557	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R558	1-216-839-11	METAL GLAZE 33K 5% 1/16W	
R559	1-216-827-11	METAL GLAZE 3.3K 5% 1/16W	
R560	1-216-827-11	METAL GLAZE 3.3K 5% 1/16W	
R581	1-216-840-11	METAL GLAZE 39K 5% 1/16W	
R582	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R583	1-216-814-11	METAL GLAZE 270 5% 1/16W	
R584	1-216-813-11	METAL GLAZE 220 5% 1/16W	
R585	1-216-803-11	METAL GLAZE 33 5% 1/16W	
R586	1-216-799-11	METAL GLAZE 15 5% 1/16W	
R587	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R588	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R589	1-216-831-11	METAL GLAZE 6.8K 5% 1/16W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV501	1-238-092-11	RES, ADJ CERMET 47K	
RV502	1-238-092-11	RES, ADJ CERMET 47K	

****

*A-7061-937-A RG-8 BOARD, COMPLETE (Ref. No. 2000 series)
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CAPACITOR

Ref.No	Part No.	Description			Remark
C002	1-135-151-21	TANTAL CHIP	4.7MF	20%	4V
C003	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C004	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C005	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C007	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C008	1-135-217-21	TANTAL CHIP	15MF	20%	6.3V
C009	1-135-217-21	TANTAL CHIP	15MF	20%	6.3V
C009	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C010	1-126-206-11	ELECT CHIP	100MF	20%	6.3V
C012	1-135-180-21	TANTAL CHIP	3.3MF	20%	6.3V
C013	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C014	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C015	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C016	1-164-634-11	CERAMIC CHIP	1MF		16V
C018	1-163-011-11	CERAMIC CHIP	0.0015MF	10%	50V
C020	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C021	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C022	1-135-162-21	TANTAL CHIP	33MF	20%	6.3V
C023	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C024	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C025	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C026	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C027	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C028	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C029	1-164-634-11	CERAMIC CHIP	1MF		16V
C030	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C031	1-164-634-11	CERAMIC CHIP	1MF		16V
C032	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C033	1-164-634-11	CERAMIC CHIP	1MF		16V
C034	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C035	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C036	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C037	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C038	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C039	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C040	1-135-181-21	TANTAL CHIP	4.7MF	20%	6.3V
C041	1-135-149-21	TANTAL CHIP	2.2MF	20%	10V
C042	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C043	1-164-182-11	CERAMIC CHIP	0.0033MF	10%	50V
C044	1-126-204-11	ELECT CHIP	47MF	20%	16V
C045	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C046	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C047	1-126-206-11	ELECT CHIP	100MF	20%	6.3V
C048	1-135-177-21	TANTAL CHIP	1MF	20%	20V
C049	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C051	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C054	1-135-156-21	TANTAL CHIP	6.8MF	20%	10V
C055	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C056	1-135-156-21	TANTAL CHIP	6.8MF	20%	10V
C057	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C058	1-126-199-11	ELECT CHIP	6.8MF	20%	35V
C059	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C060	1-126-199-11	ELECT CHIP	6.8MF	20%	35V
C061	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C070	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C071	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C072	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C073	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C074	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C075	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C080	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C081	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C082	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C092	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C093	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C803	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C804	1-135-157-21	TANTAL CHIP	10MF	20%	6.3V
C805	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C809	1-163-038-00	CERAMIC CHIP	0.1MF		25V

CONNECTOR

Ref.No	Part No.	Description	Remark
CN001	1-565-212-11	CONNECTOR, FPC (ZIF) 26P	
CN002	1-568-238-11	CONNECTOR, FPC (1.0MM)(ZIF)16P	
CN501	1-568-235-21	CONNECTOR, FPC (1.0MM)(ZIF)10P	
CN901	1-565-528-11	PIN, CONNECTOR (PC BOARD) 3P	

VARIABLE CAPACITOR

Ref.No	Part No.	Description	Remark
CV001	1-141-370-11	CAP, CHIP TRIMMER	
CV801	1-141-331-11	CAP, VAR, TRIMMER (CHIP)	

DIODE

Ref.No	Part No.	Description	Remark
D001	8-719-400-18	DIODE MA152WK	
D002	8-719-400-18	DIODE MA152WK	
D003	8-719-400-18	DIODE MA152WK	

FILTER

Ref.No	Part No.	Description	Remark
FL001	1-236-598-11	L.P.F (Y)	
FL002	1-236-599-11	B.P.F	

IC

Ref.No	Part No.	Description	Remark
IC001	8-759-633-73	IC M51406FP	
IC003	8-759-009-07	IC MC14053BF	
IC801	8-759-150-07	IC UPD6451AGT-601	

COIL

Ref.No	Part No.	Description		Remark
L001	1-410-655-31	INDUCTOR CHIP	120UH	
L003	1-412-029-11	INDUCTOR CHIP	10UH	
L004	1-410-385-11	INDUCTOR CHIP	22UH	
L005	1-410-385-11	INDUCTOR CHIP	22UH	
L006	1-410-385-11	INDUCTOR CHIP	22UH	
L007	1-410-377-31	INDUCTOR CHIP	4.7UH	
L008	1-410-377-31	INDUCTOR CHIP	4.7UH	
L009	1-410-393-11	INDUCTOR CHIP	100UH	
L010	1-410-393-11	INDUCTOR CHIP	100UH	
L801	1-410-658-31	INDUCTOR CHIP	220UH	
L802	1-412-192-11	INDUCTOR	56UH	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q001	8-729-100-66	TRANSISTOR 2SC1623	
Q002	8-729-100-66	TRANSISTOR 2SC1623	
Q003	8-729-100-66	TRANSISTOR 2SC1623	
Q005	8-729-900-53	TRANSISTOR DTC114EK	
Q006	8-729-904-41	TRANSISTOR FMY3	
Q007	8-729-904-44	TRANSISTOR FMY4	
Q008	8-729-904-41	TRANSISTOR FMY3	
Q009	8-729-904-44	TRANSISTOR FMY4	
Q010	8-729-904-41	TRANSISTOR FMY3	
Q011	8-729-904-44	TRANSISTOR FMY4	
Q014	8-729-901-01	TRANSISTOR DTC144EK	
Q901	8-729-901-00	TRANSISTOR DTC124EK	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
Q902	8-729-901-05	TRANSISTOR DTA124EK	

RESISTOR

Ref.No	Part No.	Description	Remark
R001	1-216-748-11	METAL GLAZE 39K 5% 1/10W	
R002	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R003	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R004	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R005	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R006	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R007	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R008	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R009	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R010	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R011	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R012	1-216-079-00	METAL GLAZE 18K 5% 1/10W	
R013	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R014	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R015	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R016	1-216-105-00	METAL GLAZE 220K 5% 1/10W	
R017	1-216-037-00	METAL GLAZE 330 5% 1/10W	
R018	1-216-037-00	METAL GLAZE 330 5% 1/10W	
R019	1-216-037-00	METAL GLAZE 330 5% 1/10W	
R020	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R021	1-216-095-00	METAL GLAZE 82K 5% 1/10W	
R022	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R023	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R024	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
R025	1-216-075-00	METAL GLAZE 12K 5% 1/10W	
R026	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W	
R027	1-216-027-00	METAL GLAZE 120 5% 1/10W	
R028	1-216-045-00	METAL GLAZE 680 5% 1/10W	
R029	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R031	1-216-042-00	METAL GLAZE 510 5% 1/10W	
R032	1-216-003-11	METAL GLAZE 12 5% 1/10W	
R033	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W	
R034	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R035	1-216-091-00	METAL GLAZE 56K 5% 1/10W	
R036	1-216-063-00	METAL GLAZE 3.9K 5% 1/10W	
R037	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R038	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R041	1-216-075-00	METAL GLAZE 12K 5% 1/10W	
R042	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R043	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R045	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W	
R046	1-216-083-00	METAL GLAZE 27K 5% 1/10W	
R049	1-216-101-00	METAL GLAZE 150K 5% 1/10W	
R050	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W	
R052	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R053	1-216-090-00	METAL GLAZE 51K 5% 1/10W	
R054	1-216-031-00	METAL GLAZE 180 5% 1/10W	
R056	1-216-031-00	METAL GLAZE 180 5% 1/10W	
R057	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R061	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R062	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R064	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R065	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R066	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R067	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R068	1-216-665-11	METAL CHIP 3.9K 0.50% 1/10W	
R069	1-216-665-11	METAL CHIP 3.9K 0.50% 1/10W	
R070	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R071	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R072	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R073	1-216-687-11	METAL CHIP 33K 0.50% 1/10W	
R074	1-216-683-11	METAL CHIP 22K 0.50% 1/10W	
R075	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R076	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R080	1-216-294-00	METAL GLAZE 10M 5% 1/8W	
R501	1-216-101-00	METAL GLAZE 150K 5% 1/10W	
R502	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R503	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R504	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R505	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R506	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R507	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R801	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R802	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R803	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R804	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R805	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R806	1-216-748-11	METAL GLAZE 39K 5% 1/10W	
R807	1-216-748-11	METAL GLAZE 39K 5% 1/10W	
R808	1-216-748-11	METAL GLAZE 39K 5% 1/10W	
R809	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R810	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R811	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R812	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R901	1-216-049-00	METAL GLAZE 1K 5% 1/10W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV001	1-241-118-11	RES, VAR, CARBON 20K	
RV002	1-241-117-11	RES, VAR, CARBON 10K	
RV003	1-238-091-11	RES, ADJ CERMET 22K	
RV005	1-238-092-11	RES, ADJ CERMET 47K	
RV006	1-238-091-11	RES, ADJ CERMET 22K	
RV009	1-241-006-11	RES, VAR, CARBON 50K	
RV010	1-238-092-11	RES, ADJ CERMET 47K	
RV601	1-241-029-11	RES, VAR, CARBON 2K/2K	

SWITCH

Ref.No	Part No.	Description	Remark
SW601	1-570-386-21	SWITCH, SLIDE (DBB)	

CRYSTAL

Ref.No	Part No.	Description	Remark
X001	1-579-041-11	VIBRATOR, CRYSTAL	

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*A-7062-315-A AU-53 BOARD, COMPLETE (Ref. No. 7000 series)

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CAPACITOR

Ref.No	Part No.	Description	Remark
C104	1-162-974-11	CERAMIC CHIP 0.01MF 50V	
C105	1-162-974-11	CERAMIC CHIP 0.01MF 50V	
C106	1-162-974-11	CERAMIC CHIP 0.01MF 50V	
C107	1-162-963-11	CERAMIC CHIP 680PF 10% 50V	
C108	1-135-145-11	TANTAL. CHIP 0.47MF 20% 35V	
C109	1-162-965-11	CERAMIC CHIP 0.0015MF 10% 50V	
C110	1-164-173-11	CERAMIC CHIP 0.0039MF 10% 50V	
C111	1-162-957-11	CERAMIC CHIP 220PF 5% 50V	
C112	1-162-966-11	CERAMIC CHIP 0.0022MF 10% 50V	
C113	1-126-205-11	ELECT CHIP 47MF 20% 6.3V	
C114	1-164-156-11	CERAMIC CHIP 0.1MF 25V	
C115	1-162-974-11	CERAMIC CHIP 0.01MF 50V	
C117	1-162-910-11	CERAMIC CHIP 5PF 0.25PF 50V	
C118	1-162-968-11	CERAMIC CHIP 0.0047MF 10% 50V	
C122	1-135-151-21	TANTAL. CHIP 4.7MF 20% 4V	
C123	1-162-910-11	CERAMIC CHIP 5PF 0.25PF 50V	
C124	1-162-587-11	CERAMIC CHIP 0.039MF 10% 25V	
C125	1-162-960-11	CERAMIC CHIP 220PF 10% 50V	
C126	1-162-963-11	CERAMIC CHIP 680PF 10% 50V	

When indicating parts by reference number, please include the board name.

AU-53

Ref.No	Part No.	Description	Remark		
C127	1-164-174-11	CERAMIC CHIP	0.0082MF	10%	25V
C128	1-135-177-21	TANTAL. CHIP	1MF	20%	20V
C129	1-128-004-11	ELECT CHIP	10MF	20%	16V
C130	1-128-004-11	ELECT CHIP	10MF	20%	16V
C131	1-128-003-11	ELECT CHIP	22MF	20%	4V
C134	1-126-207-11	ELECT CHIP	33MF	20%	4V
C135	1-164-634-11	CERAMIC CHIP	1MF		16V
C136	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C137	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C138	1-164-634-11	CERAMIC CHIP	1MF		16V
C139	1-126-207-11	ELECT CHIP	33MF	20%	4V
C140	1-163-024-00	CERAMIC CHIP	0.018MF	10%	50V
C142	1-164-218-11	CERAMIC CHIP	180PF	0.25PF	50V
C143	1-162-966-11	CERAMIC CHIP	0.0022MF	10%	50V
C144	1-164-172-11	CERAMIC CHIP	0.0056MF	5%	25V
C145	1-163-986-00	CERAMIC CHIP	0.027MF	10%	25V
C163	1-124-778-00	ELECT CHIP	22MF	20%	6.3V
C164	1-162-968-11	CERAMIC CHIP	0.0047MF	10%	50V
C165	1-162-968-11	CERAMIC CHIP	0.0047MF	10%	50V
C166	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C167	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C168	1-162-968-11	CERAMIC CHIP	0.0047MF	10%	50V
C169	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C170	1-128-003-11	ELECT CHIP	22MF	20%	4V
C171	1-128-003-11	ELECT CHIP	22MF	20%	4V
C172	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C173	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C174	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V
C175	1-164-361-11	CERAMIC CHIP	0.047MF		16V
C176	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C179	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C180	1-162-928-11	CERAMIC CHIP	120PF	5%	50V
C181	1-162-965-11	CERAMIC CHIP	0.0015MF	10%	50V
C182	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C183	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C204	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C205	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C206	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C207	1-162-963-11	CERAMIC CHIP	680PF	10%	50V
C208	1-135-145-11	TANTAL. CHIP	0.47MF	20%	35V
C209	1-162-965-11	CERAMIC CHIP	0.0015MF	10%	50V
C210	1-164-173-11	CERAMIC CHIP	0.0039MF	10%	50V
C211	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C212	1-162-966-11	CERAMIC CHIP	0.0022MF	10%	50V
C213	1-126-205-11	ELECT CHIP	47MF	20%	6.3V
C214	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C215	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C217	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V
C218	1-162-968-11	CERAMIC CHIP	0.0047MF	10%	50V
C222	1-135-151-21	TANTAL. CHIP	4.7MF	20%	4V
C223	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V
C224	1-162-587-11	CERAMIC CHIP	0.039MF	10%	25V
C225	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C226	1-162-963-11	CERAMIC CHIP	680PF	10%	50V
C227	1-164-174-11	CERAMIC CHIP	0.0082MF	10%	25V
C228	1-135-177-21	TANTAL. CHIP	1MF	20%	20V
C229	1-128-004-11	ELECT CHIP	10MF	20%	16V
C230	1-128-004-11	ELECT CHIP	10MF	20%	16V
C231	1-128-003-11	ELECT CHIP	22MF	20%	4V
C234	1-126-207-11	ELECT CHIP	33MF	20%	4V
C235	1-164-634-11	CERAMIC CHIP	1MF		16V
C236	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C237	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C238	1-164-634-11	CERAMIC CHIP	1MF		16V
C239	1-126-207-11	ELECT CHIP	33MF	20%	4V

Ref.No	Part No.	Description	Remark		
C240	1-163-986-00	CERAMIC CHIP	0.027MF	10%	25V
C242	1-164-218-11	CERAMIC CHIP	180PF	0.25PF	50V
C243	1-162-966-11	CERAMIC CHIP	0.0022MF	10%	50V
C244	1-163-024-00	CERAMIC CHIP	0.018MF	10%	50V
C245	1-164-172-11	CERAMIC CHIP	0.0056MF	5%	25V
C263	1-124-778-00	ELECT CHIP	22MF	20%	6.3V
C264	1-162-968-11	CERAMIC CHIP	0.0047MF	10%	50V
C265	1-162-968-11	CERAMIC CHIP	0.0047MF	10%	50V
C269	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C270	1-128-003-11	ELECT CHIP	22MF	20%	4V
C271	1-128-003-11	ELECT CHIP	22MF	20%	4V
C275	1-164-361-11	CERAMIC CHIP	0.047MF		16V
C276	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C277	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C278	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C281	1-162-965-11	CERAMIC CHIP	0.0015MF	10%	50V
C309	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C310	1-162-964-11	CERAMIC CHIP	0.001MF	10%	50V
C315	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C316	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C317	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C318	1-135-170-21	TANTAL. CHIP	6.8MF	20%	4V
C319	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C326	1-164-634-11	CERAMIC CHIP	1MF		16V
C401	1-135-151-21	TANTAL. CHIP	4.7MF	20%	4V
C402	1-135-151-21	TANTAL. CHIP	4.7MF	20%	4V
C403	1-135-151-21	TANTAL. CHIP	4.7MF	20%	4V
C404	1-135-151-21	TANTAL. CHIP	4.7MF	20%	4V
C405	1-135-151-21	TANTAL. CHIP	4.7MF	20%	4V
C406	1-135-151-21	TANTAL. CHIP	4.7MF	20%	4V
C407	1-135-181-21	TANTAL. CHIP	4.7MF	20%	6.3V
C408	1-135-181-21	TANTAL. CHIP	4.7MF	20%	6.3V
C411	1-128-003-11	ELECT CHIP	22MF	20%	4V
C413	1-135-151-21	TANTAL. CHIP	4.7MF	20%	4V
C414	1-135-151-21	TANTAL. CHIP	4.7MF	20%	4V
C415	1-135-181-21	TANTAL. CHIP	4.7MF	20%	6.3V
C416	1-135-181-21	TANTAL. CHIP	4.7MF	20%	6.3V
C417	1-135-162-21	TANTAL. CHIP	33MF	20%	6.3V
C418	1-124-778-00	ELECT CHIP	22MF	20%	6.3V
C420	1-135-181-21	TANTAL. CHIP	4.7MF	20%	6.3V
C421	1-126-207-11	ELECT CHIP	33MF	20%	4V
C424	1-135-181-21	TANTAL. CHIP	4.7MF	20%	6.3V
C425	1-162-966-11	CERAMIC CHIP	0.0022MF	10%	50V
C426	1-135-181-21	TANTAL. CHIP	4.7MF	20%	6.3V
C427	1-135-181-21	TANTAL. CHIP	4.7MF	20%	6.3V
C428	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C429	1-164-634-11	CERAMIC CHIP	1MF		16V
C431	1-135-161-21	TANTAL. CHIP	22MF	20%	10V
C432	1-135-145-11	TANTAL. CHIP	0.47MF	20%	35V
C433	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C434	1-135-181-21	TANTAL. CHIP	4.7MF	20%	6.3V
C435	1-162-966-11	CERAMIC CHIP	0.0022MF	10%	50V
C436	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C437	1-126-206-11	ELECT CHIP	100MF	20%	6.3V
C438	1-126-206-11	ELECT CHIP	100MF	20%	6.3V
C440	1-164-634-11	CERAMIC CHIP	1MF		16V
C441	1-164-634-11	CERAMIC CHIP	1MF		16V
C442	1-135-181-21	TANTAL. CHIP	4.7MF	20%	6.3V
C443	1-135-181-21	TANTAL. CHIP	4.7MF	20%	6.3V
C444	1-162-946-11	CERAMIC CHIP	27PF	5%	50V
C450	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V
C455	1-162-946-11	CERAMIC CHIP	27PF	5%	50V
C456	1-164-227-11	CERAMIC CHIP	0.022MF	10%	25V
C457	1-162-965-11	CERAMIC CHIP	0.0015MF	10%	50V
C458	1-162-916-11	CERAMIC CHIP	12PF	5%	50V

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
C459	1-164-005-11	CERAMIC CHIP 0.47MF	25V

CONNECTOR

Ref.No	Part No.	Description	Remark
CN101	1-569-635-41	CONNECTOR, BOARD TO BOARD 20P	
CN102	1-569-636-41	CONNECTOR, BOARD TO BOARD 22P	

DIODE

Ref.No	Part No.	Description	Remark
D401	8-719-941-09	DIODE DAP202U	
D402	8-719-941-86	DIODE DAN202U	

FILTER

Ref.No	Part No.	Description	Remark
FL101	1-236-831-11	FILTER, BAND PASS	
FL102	1-236-832-11	FILTER, BAND PASS	

IC

Ref.No	Part No.	Description	Remark
IC101	8-752-053-04	IC CXA1537R	
IC103	8-759-009-07	IC MC14053BF	
IC104	8-759-030-16	IC MC34182M	
IC105	8-759-009-07	IC MC14053BF	
IC106	8-759-030-16	IC MC34182M	
IC107	8-759-009-06	IC MC14052BF	
IC108	8-759-030-16	IC MC34182M	
IC109	8-759-030-16	IC MC34182M	
IC110	8-759-234-77	IC TC4S66F	
IC111	8-759-234-77	IC TC4S66F	
IC112	8-759-991-27	IC BA3570F	
IC113	8-752-334-42	IC CXD2106Q	
IC114	8-759-209-15	IC TC4SU69F	
IC115	8-759-209-15	IC TC4SU69F	
IC116	8-759-209-15	IC TC4SU69F	
IC201	8-752-053-04	IC CXA1537R	

COIL

Ref.No	Part No.	Description	Remark
L101	1-412-066-21	INDUCTOR CHIP 220UH	
L201	1-412-066-21	INDUCTOR CHIP 220UH	
L401	1-412-031-11	INDUCTOR CHIP 47UH	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q101	8-729-905-35	TRANSISTOR 2SC4081R	
Q106	8-729-905-35	TRANSISTOR 2SC4081R	
Q107	8-729-905-35	TRANSISTOR 2SC4081R	
Q108	8-729-905-35	TRANSISTOR 2SC4081R	
Q109	8-729-905-35	TRANSISTOR 2SC4081R	
Q111	8-729-905-35	TRANSISTOR 2SC4081R	
Q112	8-729-905-35	TRANSISTOR 2SC4081R	
Q140	8-729-905-18	TRANSISTOR DTC144EU	
Q141	8-729-905-18	TRANSISTOR DTC144EU	
Q201	8-729-905-35	TRANSISTOR 2SC4081R	
Q205	8-729-905-12	TRANSISTOR DTA144EU	
Q208	8-729-905-35	TRANSISTOR 2SC4081R	
Q209	8-729-905-35	TRANSISTOR 2SC4081R	
Q240	8-729-905-18	TRANSISTOR DTC144EU	
Q241	8-729-905-18	TRANSISTOR DTC144EU	
Q308	8-729-905-23	TRANSISTOR 2SA1576R	
Q309	8-729-905-18	TRANSISTOR DTC144EU	
Q310	8-729-905-35	TRANSISTOR 2SC4081R	
Q311	8-729-905-35	TRANSISTOR 2SC4081R	
Q313	8-729-903-10	TRANSISTOR FMW	
Q314	8-729-905-35	TRANSISTOR 2SC4081R	
Q315	8-729-905-23	TRANSISTOR 2SA1576R	
Q401	8-729-905-35	TRANSISTOR 2SC4081R	
Q402	8-729-905-35	TRANSISTOR 2SC4081R	
Q403	8-729-905-23	TRANSISTOR 2SA1576R	
Q404	8-729-905-35	TRANSISTOR 2SC4081R	
Q405	8-729-920-XX	TRANSISTOR DTA114EU	
Q406	8-729-920-XX	TRANSISTOR DTA114EU	
Q407	8-729-905-18	TRANSISTOR DTC144EU	
Q408	8-729-905-35	TRANSISTOR 2SC4081R	
Q409	8-729-905-35	TRANSISTOR 2SC4081R	
Q410	8-729-905-18	TRANSISTOR DTC144EU	
Q411	8-729-905-35	TRANSISTOR 2SC4081R	
Q412	8-729-905-23	TRANSISTOR 2SA1576R	
Q413	8-729-920-XX	TRANSISTOR DTA114EU	

RESISTOR

Ref.No	Part No.	Description	Remark
R101	1-216-864-11	METAL GLAZE 0 5%	1/16W
R105	1-216-835-11	METAL GLAZE 15K 5%	1/16W
R106	1-216-840-11	METAL GLAZE 39K 5%	1/16W
R107	1-216-864-11	METAL GLAZE 0 5%	1/16W
R108	1-216-864-11	METAL GLAZE 0 5%	1/16W
R109	1-216-831-11	METAL GLAZE 6.8K 5%	1/16W
R110	1-216-829-11	METAL GLAZE 4.7K 5%	1/16W
R111	1-216-829-11	METAL GLAZE 4.7K 5%	1/16W
R112	1-216-829-11	METAL GLAZE 4.7K 5%	1/16W
R113	1-216-821-11	METAL GLAZE 1K 5%	1/16W
R114	1-216-857-11	METAL GLAZE 1M 5%	1/16W
R115	1-216-850-11	METAL GLAZE 270K 5%	1/16W
R116	1-216-820-11	METAL GLAZE 820 5%	1/16W
R117	1-216-820-11	METAL GLAZE 820 5%	1/16W
R127	1-216-864-11	METAL GLAZE 0 5%	1/16W
R128	1-216-836-11	METAL GLAZE 18K 5%	1/16W
R129	1-216-840-11	METAL GLAZE 39K 5%	1/16W
R130	1-216-851-11	METAL GLAZE 330K 5%	1/16W
R133	1-216-836-11	METAL GLAZE 18K 5%	1/16W
R135	1-216-841-11	METAL GLAZE 47K 5%	1/16W
R139	1-216-826-11	METAL GLAZE 2.7K 5%	1/16W
R140	1-216-815-11	METAL GLAZE 330 5%	1/16W
R141	1-216-837-11	METAL GLAZE 22K 5%	1/16W
R142	1-216-825-11	METAL GLAZE 2.2K 5%	1/16W
R143	1-216-828-11	METAL GLAZE 3.9K 5%	1/16W
R144	1-216-834-11	METAL GLAZE 12K 5%	1/16W
R145	1-216-819-11	METAL GLAZE 680 5%	1/16W
R146	1-216-825-11	METAL GLAZE 2.2K 5%	1/16W
R147	1-216-827-11	METAL GLAZE 3.3K 5%	1/16W
R148	1-216-826-11	METAL GLAZE 2.7K 5%	1/16W
R149	1-216-827-11	METAL GLAZE 3.3K 5%	1/16W
R150	1-216-826-11	METAL GLAZE 2.7K 5%	1/16W
R151	1-216-833-11	METAL GLAZE 10K 5%	1/16W
R152	1-216-838-11	METAL GLAZE 27K 5%	1/16W
R153	1-216-836-11	METAL GLAZE 18K 5%	1/16W
R154	1-216-826-11	METAL GLAZE 2.7K 5%	1/16W
R155	1-216-825-11	METAL GLAZE 2.2K 5%	1/16W
R156	1-216-821-11	METAL GLAZE 1K 5%	1/16W
R157	1-216-833-11	METAL GLAZE 10K 5%	1/16W
R158	1-216-831-11	METAL GLAZE 6.8K 5%	1/16W
R159	1-216-833-11	METAL GLAZE 10K 5%	1/16W
R160	1-216-831-11	METAL GLAZE 6.8K 5%	1/16W
R161	1-216-821-11	METAL GLAZE 1K 5%	1/16W
R162	1-216-821-11	METAL GLAZE 1K 5%	1/16W
R163	1-216-833-11	METAL GLAZE 10K 5%	1/16W
R164	1-216-834-11	METAL GLAZE 12K 5%	1/16W
R165	1-216-836-11	METAL GLAZE 18K 5%	1/16W
R166	1-216-831-11	METAL GLAZE 6.8K 5%	1/16W
R167	1-216-833-11	METAL GLAZE 10K 5%	1/16W
R168	1-216-829-11	METAL GLAZE 4.7K 5%	1/16W
R169	1-216-839-11	METAL GLAZE 33K 5%	1/16W
R170	1-216-839-11	METAL GLAZE 33K 5%	1/16W
R171	1-216-827-11	METAL GLAZE 3.3K 5%	1/16W
R172	1-216-834-11	METAL GLAZE 12K 5%	1/16W
R173	1-216-845-11	METAL GLAZE 100K 5%	1/16W

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R174	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R175	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R176	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R177	1-216-811-11	METAL GLAZE	150	5%	1/16W	
R178	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R179	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R182	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R183	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R184	1-216-842-11	METAL GLAZE	56K	5%	1/16W	
R185	1-216-836-11	METAL GLAZE	18K	5%	1/16W	
R186	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R188	1-216-824-11	METAL GLAZE	1.8K	5%	1/16W	
R189	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R190	1-216-836-11	METAL GLAZE	18K	5%	1/16W	
R191	1-216-820-11	METAL GLAZE	820	5%	1/16W	
R192	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R193	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R199	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R201	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R205	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R206	1-216-840-11	METAL GLAZE	39K	5%	1/16W	
R207	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R210	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R211	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R212	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R213	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R214	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R215	1-216-850-11	METAL GLAZE	270K	5%	1/16W	
R216	1-216-819-11	METAL GLAZE	680	5%	1/16W	
R217	1-216-819-11	METAL GLAZE	680	5%	1/16W	
R227	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R228	1-216-836-11	METAL GLAZE	18K	5%	1/16W	
R229	1-216-840-11	METAL GLAZE	39K	5%	1/16W	
R230	1-216-851-11	METAL GLAZE	330K	5%	1/16W	
R233	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R235	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R236	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R239	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R240	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R241	1-216-815-11	METAL GLAZE	330	5%	1/16W	
R242	1-216-813-11	METAL GLAZE	220	5%	1/16W	
R243	1-216-828-11	METAL GLAZE	3.9K	5%	1/16W	
R244	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R245	1-216-819-11	METAL GLAZE	680	5%	1/16W	
R246	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R247	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R248	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R249	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R250	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R251	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R252	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R253	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R254	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R254	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R255	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R257	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R258	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R259	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R260	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R261	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R262	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R269	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R270	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R271	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R272	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R273	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R274	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R275	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R276	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R277	1-216-811-11	METAL GLAZE	150	5%	1/16W	
R278	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R279	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R280	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R281	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R284	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R293	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R314	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R315	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R316	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R318	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R319	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R323	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R324	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	
R325	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R327	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R328	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R329	1-216-828-11	METAL GLAZE	3.9K	5%	1/16W	
R330	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R330	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R331	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R332	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R333	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R334	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R335	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R401	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R402	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R403	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R404	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R405	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R407	1-216-849-11	METAL GLAZE	220K	5%	1/16W	
R408	1-216-847-11	METAL GLAZE	150K	5%	1/16W	
R409	1-216-842-11	METAL GLAZE	56K	5%	1/16W	
R410	1-216-842-11	METAL GLAZE	56K	5%	1/16W	
R411	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R412	1-216-842-11	METAL GLAZE	56K	5%	1/16W	
R413	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R414	1-216-842-11	METAL GLAZE	56K	5%	1/16W	
R415	1-216-842-11	METAL GLAZE	56K	5%	1/16W	
R421	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R422	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R423	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R424	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R425	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R426	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R427	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R428	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R429	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R430	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R431	1-216-819-11	METAL GLAZE	680	5%	1/16W	
R432	1-216-819-11	METAL GLAZE	680	5%	1/16W	
R433	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R434	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R435	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R436	1-216-836-11	METAL GLAZE	18K	5%	1/16W	
R437	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R438	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R440	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R441	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R442	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R443	1-216-823-11	METAL GLAZE	1.5K	5%	1/16W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description			Remark
R444	1-216-816-11	METAL GLAZE	390	5%	1/16W
R445	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R446	1-216-845-11	METAL GLAZE	100K	5%	1/16W
R447	1-216-845-11	METAL GLAZE	100K	5%	1/16W
R450	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R451	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R453	1-216-857-11	METAL GLAZE	1M	5%	1/16W
R456	1-216-804-11	METAL GLAZE	39	5%	1/16W
R457	1-216-804-11	METAL GLAZE	39	5%	1/16W
R458	1-216-841-11	METAL GLAZE	47K	5%	1/16W
R459	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R460	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R461	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W
R462	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R463	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W
R464	1-216-817-11	METAL GLAZE	470	5%	1/16W
R465	1-216-842-11	METAL GLAZE	56K	5%	1/16W
R466	1-216-847-11	METAL GLAZE	150K	5%	1/16W
R467	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W
R468	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W

VARIABLE RESISTOR

RV101	1-238-091-11	RES, ADJ CERMET 22K
RV102	1-238-090-11	RES, ADJ CERMET 10K
RV201	1-238-092-11	RES, ADJ CERMET 47K
RV202	1-238-090-11	RES, ADJ CERMET 10K
RV203	1-238-091-11	RES, ADJ CERMET 22K
RV204	1-238-089-11	RES, ADJ CERMET 4.7K
RV401	1-238-093-11	RES, ADJ CERMET 100K
RV402	1-238-093-11	RES, ADJ CERMET 100K

CRYSTAL

X101	1-579-050-11	VIBRATOR, CRYSTAL

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A-7062-316-A SV-38 BOARD, COMPLETE (Ref. No. 5000 series)
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	1-634-993-11	FP-270 FLEXIBLE BOARD
	3-744-169-01	COVER, CS JACK
	3-744-175-01	COVER, IO JACK
	*3-746-902-01	CASE (LID), SHIELD, SDD
	*3-746-903-01	CASE (LID), SHIELD, INDEX

CAPACITOR

Ref.No	Part No.	Description			Remark
C101	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C102	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C103	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C104	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C105	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C106	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C107	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C108	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C109	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C110	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C111	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C112	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C113	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C114	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C115	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C116	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C117	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C118	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C119	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C120	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C121	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C122	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V
C123	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C124	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C125	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C126	1-135-159-21	TANTAL. CHIP	10MF	20%	20V
C127	1-126-206-11	ELECT CHIP	100MF	20%	6.3V
C128	1-164-633-11	CERAMIC CHIP	0.1MF	10%	25V
C131	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C132	1-164-360-11	CERAMIC CHIP	0.1MF		16V
C134	1-164-360-11	CERAMIC CHIP	0.1MF		16V
C135	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V
C136	1-164-360-11	CERAMIC CHIP	0.1MF		16V
C138	1-164-360-11	CERAMIC CHIP	0.1MF		16V
C139	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C140	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C141	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C142	1-164-633-11	CERAMIC CHIP	0.1MF	10%	25V
C143	1-164-633-11	CERAMIC CHIP	0.1MF	10%	25V
C144	1-162-970-11	CERAMIC CHIP	0.01MF	10%	25V
C145	1-162-970-11	CERAMIC CHIP	0.01MF	10%	25V
C146	1-162-995-11	CERAMIC CHIP	0.022MF		50V
C201	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V
C202	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V
C203	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V
C204	1-164-633-11	CERAMIC CHIP	0.1MF	10%	25V
C206	1-162-970-11	CERAMIC CHIP	0.01MF	10%	25V
C208	1-164-360-11	CERAMIC CHIP	0.1MF		16V
C209	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C210	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V
C211	1-162-964-11	CERAMIC CHIP	0.001MF	10%	50V
C212	1-164-633-11	CERAMIC CHIP	0.1MF	10%	25V
C213	1-162-969-11	CERAMIC CHIP	0.0068MF	10%	25V
C214	1-164-360-11	CERAMIC CHIP	0.1MF		16V
C215	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C216	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C217	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C218	1-164-360-11	CERAMIC CHIP	0.1MF		16V
C219	1-164-360-11	CERAMIC CHIP	0.1MF		16V
C220	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C221	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C222	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C223	1-162-970-11	CERAMIC CHIP	0.01MF	10%	25V
C224	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C225	1-162-970-11	CERAMIC CHIP	0.01MF	10%	25V
C226	1-162-917-11	CERAMIC CHIP	15PF	5%	50V
C228	1-162-917-11	CERAMIC CHIP	15PF	5%	50V
C229	1-164-360-11	CERAMIC CHIP	0.1MF		16V
C230	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C231	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C232	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C233	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C234	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C235	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C236	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C237	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C238	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C239	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C240	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C241	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C242	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C243	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C244	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C245	1-162-945-11	CERAMIC CHIP	22PF	5%	50V

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description			Remark
C246	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C247	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C248	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C249	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C250	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C251	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C252	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C253	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C254	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C255	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C256	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C257	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C258	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C259	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C260	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C261	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C262	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C263	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C265	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C266	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C267	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C268	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C269	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C270	1-162-970-11	CERAMIC CHIP	0.01MF	10%	25V
C271	1-164-360-11	CERAMIC CHIP	0.1MF		16V
C272	1-164-360-11	CERAMIC CHIP	0.1MF		16V
C302	1-162-966-11	CERAMIC CHIP	0.0022MF	10%	50V
C305	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C308	1-162-956-11	CERAMIC CHIP	180PF	5%	50V
C309	1-162-947-11	CERAMIC CHIP	33PF	5%	50V
C310	1-162-963-11	CERAMIC CHIP	680PF	10%	50V
C311	1-164-360-11	CERAMIC CHIP	0.1MF		16V
C312	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C313	1-135-149-21	TANTAL. CHIP	2.2MF	20%	10V
C315	1-162-970-11	CERAMIC CHIP	0.01MF	10%	25V
C317	1-135-180-21	TANTAL. CHIP	3.3MF	20%	6.3V
C319	1-164-360-11	CERAMIC CHIP	0.1MF		16V
C320	1-162-970-11	CERAMIC CHIP	0.01MF	10%	25V
C321	1-164-633-11	CERAMIC CHIP	0.1MF	10%	25V
C401	1-164-360-11	CERAMIC CHIP	0.1MF		16V
C402	1-164-360-11	CERAMIC CHIP	0.1MF		16V
C403	1-127-489-11	ELECT(SOLID)	10MF	20%	10V
C404	1-127-558-11	ELECT(SOLID)	10MF	20%	10V
C405	1-127-558-11	ELECT(SOLID)	10MF	20%	10V
C406	1-127-558-11	ELECT(SOLID)	10MF	20%	10V
C407	1-163-123-00	CERAMIC CHIP	180PF	5%	50V
C408	1-164-360-11	CERAMIC CHIP	0.1MF		16V
C409	1-164-633-11	CERAMIC CHIP	0.1MF	10%	25V
C410	1-127-558-11	ELECT(SOLID)	10MF	20%	10V
C411	1-164-361-11	CERAMIC CHIP	0.047MF		16V
C412	1-127-558-11	ELECT(SOLID)	10MF	20%	10V
C413	1-164-633-11	CERAMIC CHIP	0.1MF	10%	25V
C414	1-164-633-11	CERAMIC CHIP	0.1MF	10%	25V
C415	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C416	1-162-964-11	CERAMIC CHIP	0.001MF	10%	50V
C417	1-164-361-11	CERAMIC CHIP	0.047MF		16V
C418	1-162-916-11	CERAMIC CHIP	12PF	5%	50V
C419	1-164-360-11	CERAMIC CHIP	0.1MF		16V
C420	1-127-491-00	ELECT(SOLID)	22MF	20%	10V
C421	1-164-360-11	CERAMIC CHIP	0.1MF		16V
C422	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C423	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C424	1-127-558-11	ELECT(SOLID)	10MF	20%	10V
C425	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C426	1-127-558-11	ELECT(SOLID)	10MF	20%	10V

Ref.No	Part No.	Description			Remark
C427	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V
C428	1-127-558-11	ELECT(SOLID)	10MF	20%	10V
C429	1-135-216-11	TANTAL. CHIP	10MF	20%	10V
C430	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V
C431	1-127-558-11	ELECT(SOLID)	10MF	20%	10V
C432	1-164-360-11	CERAMIC CHIP	0.1MF		16V
C433	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V
C434	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V
C435	1-135-159-21	TANTAL. CHIP	10MF	20%	20V
C436	1-135-181-21	TANTAL. CHIP	4.7MF	20%	6.3V
C437	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C438	1-136-718-11	TANTAL. CHIP	0.1MF	5%	25V
C439	1-164-330-21	CERAMIC CHIP	0.22MF	10%	16V
C440	1-164-330-21	CERAMIC CHIP	0.22MF	10%	16V
C441	1-164-330-21	CERAMIC CHIP	0.22MF	10%	16V
C442	1-164-634-11	CERAMIC CHIP	1MF		16V
C443	1-135-159-21	TANTAL. CHIP	10MF	20%	20V
C444	1-162-967-11	CERAMIC CHIP	0.0033MF	10%	50V
C445	1-162-970-11	CERAMIC CHIP	0.01MF	10%	25V
C446	1-164-330-21	CERAMIC CHIP	0.22MF	10%	16V
C447	1-162-967-11	CERAMIC CHIP	0.0033MF	10%	50V
C448	1-164-330-21	CERAMIC CHIP	0.22MF	10%	16V
C449	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V
C450	1-162-967-11	CERAMIC CHIP	0.0033MF	10%	50V
C451	1-164-633-11	CERAMIC CHIP	0.1MF	10%	25V
C453	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C454	1-162-964-11	CERAMIC CHIP	0.001MF	10%	50V
C455	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V
C456	1-135-180-21	TANTAL. CHIP	3.3MF	20%	6.3V
C457	1-135-149-21	TANTAL. CHIP	2.2MF	20%	10V
C458	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C460	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V
C461	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V
C499	1-164-360-11	CERAMIC CHIP	0.1MF		16V
C601	1-164-005-11	CERAMIC CHIP	0.47MF		25V
C602	1-164-005-11	CERAMIC CHIP	0.47MF		25V
C603	1-135-177-21	TANTAL. CHIP	1MF	20%	20V
C604	1-124-779-00	ELECT CHIP	10MF	20%	16V
C605	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V
C606	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C607	1-164-361-11	CERAMIC CHIP	0.047MF		16V
C608	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C609	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C610	1-164-361-11	CERAMIC CHIP	0.047MF		16V
C611	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C612	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V
C613	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V
C614	1-124-778-00	ELECT CHIP	22MF	20%	6.3V
C615	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C616	1-164-222-11	CERAMIC CHIP	0.22MF		25V
C617	1-135-177-21	TANTAL. CHIP	1MF	20%	20V
C618	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V
C619	1-162-955-11	CERAMIC CHIP	150PF	5%	50V
C620	1-126-607-11	ELECT CHIP	47MF	20%	4V
C621	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V
C622	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C623	1-135-201-11	TANTAL. CHIP	10MF	20%	4V
C624	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C625	1-124-778-00	ELECT CHIP	22MF	20%	6.3V
C626	1-164-005-11	CERAMIC CHIP	0.47MF		25V
C627	1-135-201-11	TANTAL. CHIP	10MF	20%	4V
C628	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C629	1-135-180-21	TANTAL. CHIP	3.3MF	20%	6.3V
C630	1-135-180-21	TANTAL. CHIP	3.3MF	20%	6.3V
C631	1-126-607-11	ELECT CHIP	47MF	20%	4V

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description			Remark
C632	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V
C633	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C634	1-135-201-11	TANTAL. CHIP	10MF	20%	4V
C635	1-164-005-11	CERAMIC CHIP	0.47MF		25V
C636	1-162-952-11	CERAMIC CHIP	82PF	5%	50V
C637	1-135-201-11	TANTAL. CHIP	10MF	20%	4V
C638	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C639	1-162-954-11	CERAMIC CHIP	120PF	5%	50V
C640	1-135-201-11	TANTAL. CHIP	10MF	20%	4V
C641	1-162-949-11	CERAMIC CHIP	47PF	5%	50V
C642	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V
C643	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C644	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C645	1-162-965-11	CERAMIC CHIP	0.0015MF	10%	50V
C646	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V
C647	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C648	1-126-607-11	ELECT CHIP	47MF	20%	4V
C649	1-162-959-11	CERAMIC CHIP	330PF	5%	50V
C650	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C651	1-135-201-11	TANTAL. CHIP	10MF	20%	4V
C652	1-162-950-11	CERAMIC CHIP	56PF	5%	50V
C653	1-162-944-11	CERAMIC CHIP	18PF	5%	50V
C655	1-163-135-00	CERAMIC CHIP	560PF	5%	50V
C656	1-162-950-11	CERAMIC CHIP	56PF	5%	50V
C657	1-135-201-11	TANTAL. CHIP	10MF	20%	4V
C658	1-162-944-11	CERAMIC CHIP	18PF	5%	50V
C659	1-164-005-11	CERAMIC CHIP	0.47MF		25V
C660	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C663	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V
C664	1-124-778-00	ELECT CHIP	22MF	20%	6.3V
C665	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C666	1-164-361-11	CERAMIC CHIP	0.047MF		16V
C667	1-164-005-11	CERAMIC CHIP	0.47MF		25V
C668	1-135-177-21	TANTAL. CHIP	1MF	20%	20V
C669	1-126-246-11	ELECT CHIP	220MF	20%	4V
C670	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C671	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V
C672	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C673	1-135-149-21	TANTAL. CHIP	2.2MF	20%	10V
C674	1-135-146-21	TANTAL. CHIP	0.68MF	20%	25V
C676	1-135-201-11	TANTAL. CHIP	10MF	20%	4V
C677	1-126-607-11	ELECT CHIP	47MF	20%	4V
C679	1-164-005-11	CERAMIC CHIP	0.47MF		25V
C701	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C702	1-162-949-11	CERAMIC CHIP	47PF	5%	50V
C703	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C704	1-162-954-11	CERAMIC CHIP	120PF	5%	50V
C705	1-162-952-11	CERAMIC CHIP	82PF	5%	50V
C706	1-162-951-11	CERAMIC CHIP	68PF	5%	50V
C707	1-162-950-11	CERAMIC CHIP	56PF	5%	50V
C708	1-162-967-11	CERAMIC CHIP	0.0033MF	10%	50V
C709	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C710	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C711	1-162-955-11	CERAMIC CHIP	150PF	5%	50V
C712	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C713	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C714	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V
C715	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C716	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V
C717	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C718	1-126-607-11	ELECT CHIP	47MF	20%	4V
C719	1-162-926-11	CERAMIC CHIP	82PF	5%	50V
C720	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C721	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C722	1-135-177-21	TANTAL. CHIP	1MF	20%	20V
C723	1-162-995-11	CERAMIC CHIP	0.022MF		50V
C724	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C725	1-162-959-11	CERAMIC CHIP	330PF	5%	50V
C726	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V
C727	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C728	1-135-146-21	TANTAL. CHIP	0.68MF	20%	25V
C729	1-135-177-21	TANTAL. CHIP	1MF	20%	20V
C731	1-162-950-11	CERAMIC CHIP	56PF	5%	50V
C732	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C733	1-162-936-11	CERAMIC CHIP	5PF	0.25PF	50V
C749	1-164-360-11	CERAMIC CHIP	0.1MF		16V
C750	1-162-947-11	CERAMIC CHIP	33PF	5%	50V
C801	1-164-361-11	CERAMIC CHIP	0.047MF		16V
C804	1-162-965-11	CERAMIC CHIP	0.0015MF	10%	50V
C805	1-162-958-11	CERAMIC CHIP	270PF	5%	50V
C806	1-162-950-11	CERAMIC CHIP	56PF	5%	50V
C807	1-162-951-11	CERAMIC CHIP	68PF	5%	50V
C809	1-162-946-11	CERAMIC CHIP	27PF	5%	50V
C810	1-162-951-11	CERAMIC CHIP	68PF	5%	50V
C813	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C819	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C820	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C821	1-124-778-00	ELECT CHIP	22MF	20%	6.3V
C823	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C824	1-162-959-11	CERAMIC CHIP	330PF	5%	50V
C825	1-164-145-11	CERAMIC CHIP	390PF	5%	50V
C826	1-164-634-11	CERAMIC CHIP	1MF		16V
C827	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C828	1-124-779-00	ELECT CHIP	10MF	20%	16V
C829	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V
C831	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C832	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C833	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C834	1-162-951-11	CERAMIC CHIP	68PF	5%	50V
C836	1-163-128-00	CERAMIC CHIP	300PF	5%	50V
C837	1-162-995-11	CERAMIC CHIP	0.022MF		50V
C838	1-162-948-11	CERAMIC CHIP	39PF	5%	50V
C839	1-162-943-11	CERAMIC CHIP	15PF	5%	50V
C840	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C841	1-162-995-11	CERAMIC CHIP	0.022MF		50V
C842	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C843	1-162-995-11	CERAMIC CHIP	0.022MF		50V
C844	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C845	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C846	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C847	1-162-942-11	CERAMIC CHIP	12PF	5%	50V
C850	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C851	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C852	1-163-116-00	CERAMIC CHIP	91PF	5%	50V
C854	1-163-104-00	CERAMIC CHIP	30PF	5%	50V
C855	1-162-951-11	CERAMIC CHIP	68PF	5%	50V
C856	1-162-955-11	CERAMIC CHIP	150PF	5%	50V
C859	1-162-954-11	CERAMIC CHIP	120PF	5%	50V
C863	1-162-952-11	CERAMIC CHIP	82PF	5%	50V
C901	1-164-361-11	CERAMIC CHIP	0.047MF		16V
C905	1-164-360-11	CERAMIC CHIP	0.1MF		16V
C906	1-135-156-21	TANTAL. CHIP	6.8MF	20%	10V
C907	1-164-360-11	CERAMIC CHIP	0.1MF		16V
C908	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C909	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V
C911	1-164-634-11	CERAMIC CHIP	1MF		16V
C912	1-164-634-11	CERAMIC CHIP	1MF		16V
C913	1-164-634-11	CERAMIC CHIP	1MF		16V
C921	1-164-634-11	CERAMIC CHIP	1MF		16V
C922	1-164-634-11	CERAMIC CHIP	1MF		16V

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description			Remark
C923	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C924	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C925	1-164-360-11	CERAMIC CHIP	0.1MF		16V
C926	1-162-968-11	CERAMIC CHIP	0.0047MF	10%	50V
C927	1-164-634-11	CERAMIC CHIP	1MF		16V
C928	1-164-360-11	CERAMIC CHIP	0.1MF		16V
C930	1-162-926-11	CERAMIC CHIP	82PF	5%	50V
C931	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C932	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C933	1-164-360-11	CERAMIC CHIP	0.1MF		16V
C934	1-164-360-11	CERAMIC CHIP	0.1MF		16V
C935	1-135-181-21	TANTAL CHIP	4.7MF	20%	6.3V
C936	1-164-360-11	CERAMIC CHIP	0.1MF		16V
C937	1-135-181-21	TANTAL CHIP	4.7MF	20%	6.3V
C938	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C939	1-164-360-11	CERAMIC CHIP	0.1MF		16V
C940	1-164-360-11	CERAMIC CHIP	0.1MF		16V
C941	1-164-360-11	CERAMIC CHIP	0.1MF		16V
C942	1-164-227-11	CERAMIC CHIP	0.022MF	10%	25V
C943	1-162-964-11	CERAMIC CHIP	0.001MF	10%	50V
C948	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C949	1-164-360-11	CERAMIC CHIP	0.1MF		16V
C950	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C952	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C953	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C954	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C955	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C956	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C958	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C959	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C960	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C962	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C971	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C972	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C973	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C974	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C977	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C978	1-164-634-11	CERAMIC CHIP	1MF		16V
C979	1-164-360-11	CERAMIC CHIP	0.1MF		16V

CERAMIC FILTER

CF701	1-567-306-11	FILTER, CERAMIC

CONNECTOR

CN001	1-566-531-11	CONNECTOR, FPC (ZIF) 15P
CN002	1-569-030-11	CONNECTOR, FPC (ZIF) 21P
CN003	1-569-481-11	CONNECTOR, FPC 30P
CN004	1-569-633-61	CONNECTOR, BOARD TO BOARD 26P
CN005	1-569-631-41	CONNECTOR, BOARD TO BOARD 20P
CN006	1-569-632-41	CONNECTOR, BOARD TO BOARD 22P
CN007	1-566-532-11	CONNECTOR, FPC (ZIF) 16P
CN008	1-569-363-21	CONNECTOR, FPC 15P
CN009	1-566-531-11	CONNECTOR, FPC (ZIF) 15P
CN601	*1-566-095-11	PIN, BOARD TO BOARD 6P
CN701	1-566-528-21	CONNECTOR, FPC (ZIF) 12P
CN801	1-566-534-21	CONNECTOR, FPC (ZIF) 18P

VARIABLE CAPACITOR

CV101	1-141-331-11	CAP, VAR, TRIMMER (CHIP)

DIODE

Ref.No	Part No.	Description
D101	8-719-938-72	DIODE SB01-05CP
D103	8-719-105-52	DIODE RD3.6M-B2
D104	8-719-105-XX	DIODE RD6.2M-B1
D107	8-719-941-09	DIODE DAP202U
D108	8-719-404-40	DIODE MA121
D199	8-719-404-40	DIODE MA121
D199	8-719-911-19	DIODE 1SS119
D201	8-719-941-86	DIODE DAN202U
D202	8-719-404-40	DIODE MA121
D203	8-719-404-40	DIODE MA121
D204	8-719-941-09	DIODE DAP202U
D205	8-719-941-09	DIODE DAP202U
D301	8-719-941-86	DIODE DAN202U
D401	8-719-938-78	DIODE SB10-05PCP
D402	8-719-941-09	DIODE DAP202U
D403	8-719-938-75	DIODE SB05-05CP
D404	8-719-938-75	DIODE SB05-05CP
D601	8-719-404-40	DIODE MA121
D602	8-719-404-40	DIODE MA121
D802	8-719-800-76	DIODE 1SS226
D901	8-719-106-44	DIODE RD9.1M-B2
D902	8-719-106-44	DIODE RD9.1M-B2
D921	8-719-941-86	DIODE DAN202U
D922	8-719-941-09	DIODE DAP202U
D924	8-719-941-09	DIODE DAP202U
D925	8-719-941-09	DIODE DAP202U

FERRITE BEAD RING

FB101	1-543-256-11	BEAD, FERRITE
FB102	1-412-390-21	INDUCTOR CHIP 0UH
FB201	1-543-256-11	BEAD, FERRITE
FB202	1-543-256-11	BEAD, FERRITE
FB203	1-412-390-21	INDUCTOR CHIP 0UH
FB204	1-412-390-21	INDUCTOR CHIP 0UH
FB205	1-543-256-11	BEAD, FERRITE
FB921	1-412-390-21	INDUCTOR CHIP 0UH
FB925	1-412-390-21	INDUCTOR CHIP 0UH
FB926	1-412-390-21	INDUCTOR CHIP 0UH

FILTER

FL601	1-236-757-21	FILTER, LOW PASS (C)
FL603	1-236-751-21	FILTER, LOW PASS
FL701	1-236-575-11	B.P.F (PAL-M)
FL702	1-236-146-11	FILTER, BAND PASS
FL801	1-409-475-21	FILTER, TRAP

IC

IC101	8-752-816-99	IC CXP50116-088Q
IC102	8-759-990-78	IC S-81350AG-REG
IC103	8-759-940-33	IC S-8052ALO-LG-S
IC104	8-759-946-03	IC S-8054ALR-LN-S
IC105	8-759-720-23	IC AK93C57F-E1
IC106	8-759-009-22	IC MC14094BF
IC107	8-759-209-15	IC TC4SU69F
IC108	8-759-209-97	IC TC4S81F
IC109	8-759-209-97	IC TC4S81F
IC201	8-759-234-77	IC TC4S66F
IC202	8-759-234-77	IC TC4S66F
IC204	8-759-998-98	IC LM358DR
IC206	8-752-816-17	IC CXP80116-682Q
IC301	1-808-841-11	ATF HIC
IC302	8-759-100-97	IC UPC339G2
IC401	8-759-945-17	IC MB3775PF
IC402	8-759-998-94	IC LM311DR-E1
IC403	8-759-990-55	IC CXA8006M-E1
IC404	8-759-805-06	IC CXA1127M
IC405	8-759-107-68	IC CX20115A
IC601	8-752-036-19	IC CXA1207R
IC602	8-752-033-40	IC CXA1201Q
IC701	8-752-036-20	IC CXA1208R
IC802	8-759-012-00	IC MC10H116M

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
IC803	8-759-998-32	IC CXD-2107M	
IC901	8-759-701-02	IC NJM2073M	
IC921	8-759-990-94	IC MB606199	
IC922	8-752-010-20	IC CX20102	
IC923	8-759-231-32	IC TC7S00F	
IC924	8-759-231-32	IC TC7S00F	

JACK

Ref.No	Part No.	Description	Remark
J101	1-563-282-11	JACK, SMALL TYPE	
J701	1-569-639-11	JACK, PIN 3P	

COIL

Ref.No	Part No.	Description	Remark
L102	1-410-993-11	INDUCTOR CHIP 1UH	
L103	1-410-993-11	INDUCTOR CHIP 1UH	
L104	1-410-993-11	INDUCTOR CHIP 1UH	
L105	1-410-993-11	INDUCTOR CHIP 1UH	
L106	1-410-993-11	INDUCTOR CHIP 1UH	
L107	1-410-993-11	INDUCTOR CHIP 1UH	
L201	1-408-789-21	INDUCTOR CHIP 100UH	
L203	1-410-993-11	INDUCTOR CHIP 1UH	
L204	1-410-993-11	INDUCTOR CHIP 1UH	
L205	1-410-993-11	INDUCTOR CHIP 1UH	
L206	1-410-993-11	INDUCTOR CHIP 1UH	
L207	1-410-993-11	INDUCTOR CHIP 1UH	
L208	1-410-993-11	INDUCTOR CHIP 1UH	
L209	1-410-993-11	INDUCTOR CHIP 1UH	
L210	1-410-993-11	INDUCTOR CHIP 1UH	
L211	1-410-993-11	INDUCTOR CHIP 1UH	
L212	1-410-993-11	INDUCTOR CHIP 1UH	
L401	1-424-104-11	COIL, CHOKE 10UH	
L402	1-410-337-11	INDUCTOR 1UH	
L403	1-424-104-11	COIL, CHOKE 10UH	
L404	1-424-104-11	COIL, CHOKE 10UH	
L405	1-424-106-11	COIL, CHOKE 47UH	
L406	1-424-104-11	COIL, CHOKE 10UH	
L407	1-424-106-11	COIL, CHOKE 47UH	
L408	1-424-105-11	COIL, CHOKE 22UH	
L409	1-408-789-21	INDUCTOR CHIP 100UH	
L601	1-412-032-11	INDUCTOR CHIP 100UH	
L602	1-410-388-21	INDUCTOR CHIP 39UH	
L603	1-410-390-11	INDUCTOR CHIP 56UH	
L604	1-410-393-11	INDUCTOR CHIP 100UH	
L605	1-410-379-31	INDUCTOR CHIP 6.8UH	
L606	1-410-390-11	INDUCTOR CHIP 56UH	
L607	1-410-393-11	INDUCTOR CHIP 100UH	
L608	1-412-029-11	INDUCTOR CHIP 10UH	
L609	1-412-029-11	INDUCTOR CHIP 10UH	
L610	1-412-032-11	INDUCTOR CHIP 100UH	
L611	1-412-032-11	INDUCTOR CHIP 100UH	
L701	1-410-393-11	INDUCTOR CHIP 100UH	
L702	1-410-393-11	INDUCTOR CHIP 100UH	
L703	1-410-656-11	INDUCTOR CHIP 150UH	
L704	1-410-655-31	INDUCTOR CHIP 120UH	
L705	1-410-393-11	INDUCTOR CHIP 100UH	
L706	1-410-385-11	INDUCTOR CHIP 22UH	
L707	1-410-385-11	INDUCTOR CHIP 22UH	
L708	1-410-377-31	INDUCTOR CHIP 4.7UH	
L801	1-410-167-41	INDUCTOR CHIP 820UH	
L802	1-410-657-21	INDUCTOR CHIP 180UH	
L803	1-412-032-11	INDUCTOR CHIP 100UH	
L804	1-412-032-11	INDUCTOR CHIP 100UH	
L805	1-410-379-31	INDUCTOR CHIP 6.8UH	
L806	1-410-378-11	INDUCTOR CHIP 5.6UH	
L808	1-410-386-11	INDUCTOR CHIP 27UH	
L809	1-410-380-31	INDUCTOR CHIP 8.2UH	
L811	1-410-380-31	INDUCTOR CHIP 8.2UH	
L813	1-410-393-11	INDUCTOR CHIP 100UH	
L814	1-410-383-31	INDUCTOR CHIP 15UH	
L817	1-410-658-31	INDUCTOR CHIP 220UH	
L818	1-410-656-11	INDUCTOR CHIP 150UH	
L819	1-412-280-31	INDUCTOR 330UH	
L820	1-412-029-11	INDUCTOR CHIP 10UH	
L821	1-410-375-11	INDUCTOR CHIP 3.3UH	
L901	1-412-032-11	INDUCTOR CHIP 100UH	
L902	1-412-031-11	INDUCTOR CHIP 47UH	
L922	1-412-058-11	INDUCTOR CHIP 10UH	
L923	1-412-058-11	INDUCTOR CHIP 10UH	

IC LINK

Ref.No	Part No.	Description	Remark
PS201⚠.	1-532-605-00	LINK, IC (ICP-N10)	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q101	8-729-905-18	TRANSISTOR DTC144EU	
Q102	8-729-905-35	TRANSISTOR 2SC4081R	
Q103	8-729-220-93	TRANSISTOR 2SK209G	
Q104	8-729-905-18	TRANSISTOR DTC144EU	
Q105	8-729-905-35	TRANSISTOR 2SC4081R	
Q106	8-729-905-23	TRANSISTOR 2SA1576R	
Q107 ⚠.	8-729-220-93	TRANSISTOR 2SK209G	
Q108 ⚠.	8-729-220-93	TRANSISTOR 2SK209G	
Q109	8-729-905-12	TRANSISTOR DTA144EU	
Q110	8-729-905-35	TRANSISTOR 2SC4081R	
Q111	8-729-905-22	TRANSISTOR 2SA1576Q	
Q112	8-729-905-22	TRANSISTOR 2SA1576Q	
Q113	8-729-921-08	TRANSISTOR DTC144TU	
Q114	8-729-403-24	TRANSISTOR XN4210	
Q115	8-729-921-08	TRANSISTOR DTC144TU	
Q116	8-729-403-24	TRANSISTOR XN4210	
Q117	8-729-907-00	TRANSISTOR DTC114EU	
Q118	8-729-920-59	TRANSISTOR IMX2	
Q201	8-729-905-35	TRANSISTOR 2SC4081R	
Q202	8-729-905-35	TRANSISTOR 2SC4081R	
Q203	8-729-921-08	TRANSISTOR DTC144TU	
Q204	8-729-902-96	TRANSISTOR FMS1	
Q205	8-729-903-82	TRANSISTOR FMW2	
Q206	8-729-907-00	TRANSISTOR DTC114EU	
Q207	8-729-905-35	TRANSISTOR 2SC4081R	
Q208	8-729-820-46	TRANSISTOR 2SB1202FAS	
Q209	8-729-905-35	TRANSISTOR 2SC4081R	
Q210	8-729-403-24	TRANSISTOR XN4210	
Q212	8-729-905-12	TRANSISTOR DTA144EU	
Q213	8-729-905-18	TRANSISTOR DTC144EU	
Q214	8-729-905-18	TRANSISTOR DTC144EU	
Q215	8-729-905-18	TRANSISTOR DTC144EU	
Q216	8-729-905-35	TRANSISTOR 2SC4081R	
Q301	8-729-905-23	TRANSISTOR 2SA1576R	
Q302	8-729-905-35	TRANSISTOR 2SC4081R	
Q303	8-729-905-23	TRANSISTOR 2SA1576R	
Q304	8-729-905-35	TRANSISTOR 2SC4081R	
Q305	8-729-905-18	TRANSISTOR DTC144EU	
Q306	8-729-905-18	TRANSISTOR DTC144EU	
Q401	8-729-905-35	TRANSISTOR 2SC4081R	
Q402	8-729-901-04	TRANSISTOR DTA114EK	
Q403	8-729-905-35	TRANSISTOR 2SC4081R	
Q404 ⚠.	8-729-805-25	TRANSISTOR 2SB1121	
Q405	8-729-905-35	TRANSISTOR 2SC4081R	
Q406	8-729-905-61	TRANSISTOR DTC124EU	
Q407	8-729-905-35	TRANSISTOR 2SC4081R	
Q408 ⚠.	8-729-805-25	TRANSISTOR 2SB1121	
Q409 ⚠.	8-729-805-25	TRANSISTOR 2SB1121	

When indicating parts by reference number, please include the board name.

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No	Part No.	Description	Remark
Q410	⚠.8-729-805-25	TRANSISTOR 2SB1121	
Q411	⚠.8-729-805-25	TRANSISTOR 2SB1121	
Q412	8-729-905-35	TRANSISTOR 2SC4081R	
Q413	8-729-907-00	TRANSISTOR DTC114EU	
Q415	8-729-905-18	TRANSISTOR DTC144EU	
Q416	8-729-905-12	TRANSISTOR DTA144EU	
Q418	⚠.8-729-162-44	TRANSISTOR 2SB624-V4	
Q419	8-729-907-00	TRANSISTOR DTC114EU	
Q420	8-729-907-00	TRANSISTOR DTC114EU	
Q601	8-729-905-23	TRANSISTOR 2SA1576R	
Q602	8-729-905-35	TRANSISTOR 2SC4081R	
Q603	8-729-905-35	TRANSISTOR 2SC4081R	
Q604	8-729-905-12	TRANSISTOR DTA144EU	
Q605	8-729-905-18	TRANSISTOR DTC144EU	
Q606	8-729-905-35	TRANSISTOR 2SC4081R	
Q607	8-729-905-12	TRANSISTOR DTA144EU	
Q608	8-729-905-18	TRANSISTOR DTC144EU	
Q609	8-729-905-23	TRANSISTOR 2SA1576R	
Q610	8-729-905-35	TRANSISTOR 2SC4081R	
Q611	8-729-905-23	TRANSISTOR 2SA1576R	
Q612	8-729-905-35	TRANSISTOR 2SC4081R	
Q613	8-729-905-35	TRANSISTOR 2SC4081R	
Q614	8-729-905-35	TRANSISTOR 2SC4081R	
Q615	8-729-905-35	TRANSISTOR 2SC4081R	
Q616	8-729-905-23	TRANSISTOR 2SA1576R	
Q617	8-729-905-35	TRANSISTOR 2SC4081R	
Q618	8-729-141-48	TRANSISTOR 2SB624-BV345	
Q619	8-729-905-18	TRANSISTOR DTC144EU	
Q620	8-729-907-00	TRANSISTOR DTC114EU	
Q625	8-729-905-12	TRANSISTOR DTA144EU	
Q626	8-729-905-18	TRANSISTOR DTC144EU	
Q627	8-729-905-23	TRANSISTOR 2SA1576R	
Q628	8-729-920-48	TRANSISTOR IMH2	
Q629	8-729-905-35	TRANSISTOR 2SC4081R	
Q631	8-729-905-12	TRANSISTOR DTA144EU	
Q632	8-729-905-18	TRANSISTOR DTC144EU	
Q701	8-729-905-35	TRANSISTOR 2SC4081R	
Q702	8-729-905-23	TRANSISTOR 2SA1576R	
Q703	8-729-905-35	TRANSISTOR 2SC4081R	
Q704	8-729-905-18	TRANSISTOR DTC144EU	
Q705	8-729-905-18	TRANSISTOR DTC144EU	
Q706	8-729-905-35	TRANSISTOR 2SC4081R	
Q707	8-729-905-18	TRANSISTOR DTC144EU	
Q801	8-729-905-18	TRANSISTOR DTC144EU	
Q802	8-729-905-35	TRANSISTOR 2SC4081R	
Q803	8-729-905-35	TRANSISTOR 2SC4081R	
Q804	8-729-905-35	TRANSISTOR 2SC4081R	
Q806	8-729-905-35	TRANSISTOR 2SC4081R	
Q807	8-729-905-35	TRANSISTOR 2SC4081R	
Q808	8-729-905-35	TRANSISTOR 2SC4081R	
Q810	8-729-905-35	TRANSISTOR 2SC4081R	
Q811	8-729-905-35	TRANSISTOR 2SC4081R	
Q813	8-729-905-18	TRANSISTOR DTC144EU	
Q814	8-729-905-23	TRANSISTOR 2SA1576R	
Q815	8-729-905-35	TRANSISTOR 2SC4081R	
Q817	8-729-905-18	TRANSISTOR DTC144EU	
Q818	⚠.8-729-822-51	TRANSISTOR 2SK1469	
Q819	8-729-141-48	TRANSISTOR 2SB624-BV345	
Q820	8-729-905-18	TRANSISTOR DTC144EU	
Q821	8-729-202-38	TRANSISTOR 2SC3326N	
Q822	8-729-905-35	TRANSISTOR 2SC4081R	
Q823	8-729-905-23	TRANSISTOR 2SA1576R	
Q824	8-729-905-35	TRANSISTOR 2SC4081R	
Q825	8-729-905-23	TRANSISTOR 2SA1576R	
Q826	8-729-905-35	TRANSISTOR 2SC4081R	
Q827	8-729-905-35	TRANSISTOR 2SC4081R	
Q828	8-729-202-38	TRANSISTOR 2SC3326N	
Q829	8-729-905-35	TRANSISTOR 2SC4081R	
Q830	8-729-905-35	TRANSISTOR 2SC4081R	
Q831	8-729-920-48	TRANSISTOR IMH2	
Q833	8-729-905-35	TRANSISTOR 2SC4081R	
Q834	8-729-905-18	TRANSISTOR DTC144EU	
Q835	8-729-905-18	TRANSISTOR DTC144EU	
Q901	8-729-905-35	TRANSISTOR 2SC4081R	
Q902	8-729-141-48	TRANSISTOR 2SB624-BV345	
Q911	8-729-905-35	TRANSISTOR 2SC4081R	
Q912	8-729-905-35	TRANSISTOR 2SC4081R	
Q921	8-729-905-18	TRANSISTOR DTC144EU	
Q922	8-729-905-35	TRANSISTOR 2SC4081R	
Q923	8-729-905-35	TRANSISTOR 2SC4081R	
Q927	8-729-905-61	TRANSISTOR DTC124EU	
Q928	8-729-924-36	TRANSISTOR DTC143EU	
Q929	8-729-905-15	TRANSISTOR DTC144WU	
Q930	8-729-905-23	TRANSISTOR 2SA1576R	
Q931	8-729-905-35	TRANSISTOR 2SC4081R	
Q932	8-729-907-00	TRANSISTOR DTC114EU	

RESISTOR

Ref.No	Part No.	Description				Remark
R101	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R102	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R103	1-216-851-11	METAL GLAZE	330K	5%	1/16W	
R104	1-216-842-11	METAL GLAZE	56K	5%	1/16W	
R105	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R106	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R107	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R108	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R109	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R110	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R112	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R113	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R114	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R115	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R118	1-216-842-11	METAL GLAZE	56K	5%	1/16W	
R127	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R129	1-216-815-11	METAL GLAZE	330	5%	1/16W	
R130	1-216-861-11	METAL GLAZE	2.2M	5%	1/16W	
R131	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R132	1-216-861-11	METAL GLAZE	2.2M	5%	1/16W	
R133	1-216-861-11	METAL GLAZE	2.2M	5%	1/16W	
R135	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R136	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R137	1-216-843-11	METAL GLAZE	68K	5%	1/16W	
R138	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R139	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R140	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R141	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R144	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R145	1-216-849-11	METAL GLAZE	220K	5%	1/16W	
R146	1-216-822-11	METAL GLAZE	1.2K	5%	1/16W	
R147	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R155	1-216-849-11	METAL GLAZE	220K	5%	1/16W	
R156	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R157	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R158	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R159	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R160	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R161	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R162	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R163	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R164	1-216-834-11	METAL GLAZE	12K	5%	1/16W	

When indicating parts by reference number, please include the board name.

Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No	Part No.	Description				Remark
R165	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R166	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R167	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R168	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R169	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R170	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R171	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R172	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R173	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R174	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R175	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R179	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R181	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R182	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R184	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R186	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R188	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R190	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R191	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R194	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R195	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R201	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R202	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R203	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R204	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R205	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R206	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R207	1-216-851-11	METAL GLAZE	330K	5%	1/16W	
R208	1-216-832-11	METAL GLAZE	8.2K	5%	1/16W	
R209	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R210	1-216-843-11	METAL GLAZE	68K	5%	1/16W	
R211	1-216-843-11	METAL GLAZE	68K	5%	1/16W	
R212	1-216-828-11	METAL GLAZE	3.9K	5%	1/16W	
R213	1-216-192-00	METAL GLAZE	560	5%	1/8W	
R214	1-216-172-00	METAL GLAZE	82	5%	1/8W	
R215	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R216	1-216-828-11	METAL GLAZE	3.9K	5%	1/16W	
R217	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R218	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R219	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R220	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R221	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R222	1-216-853-11	METAL GLAZE	470K	5%	1/16W	
R223	1-216-853-11	METAL GLAZE	470K	5%	1/16W	
R224	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R225	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R226	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	
R227	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R228	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R229	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R230	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R231	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R232	1-216-842-11	METAL GLAZE	56K	5%	1/16W	
R233	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R234	1-216-842-11	METAL GLAZE	56K	5%	1/16W	
R235	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R236	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R237	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R238	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R239	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R241	1-216-336-11	METAL GLAZE	47K	1%	1/10W	
R242	1-216-336-11	METAL GLAZE	47K	1%	1/10W	
R250	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R251	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R252	1-216-833-11	METAL GLAZE	10K	5%	1/16W	

Ref.No	Part No.	Description				Remark
R253	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R262	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R264	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R265	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R267	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R268	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R269	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R270	1-216-194-00	METAL GLAZE	680	5%	1/8W	
R271	1-216-194-00	METAL GLAZE	680	5%	1/8W	
R272	1-216-194-00	METAL GLAZE	680	5%	1/8W	
R273	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R274	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R275	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R276	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R277	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R279	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R280	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R281	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R282	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R285	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R299	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R301	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R302	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R303	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R304	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R305	1-216-854-11	METAL GLAZE	560K	5%	1/16W	
R306	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R307	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R308	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R312	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R313	1-216-847-11	METAL GLAZE	150K	5%	1/16W	
R314	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R316	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R317	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R318	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R319	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R320	1-216-811-11	METAL GLAZE	150	5%	1/16W	
R321	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R322	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R323	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R325	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R326	1-216-824-11	METAL GLAZE	1.8K	5%	1/16W	
R327	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R328	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R329	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R330	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R331	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R332	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R342	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R343	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R401	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R402	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R403	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R404	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R405	1-216-828-11	METAL GLAZE	3.9K	5%	1/16W	
R407	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R408	1-216-836-11	METAL GLAZE	18K	5%	1/16W	
R409	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R410	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R411	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R412	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R413	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R414	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R415	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R416	1-216-045-00	METAL GLAZE	680	5%	1/10W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R417	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R418	1-216-824-11	METAL GLAZE	1.8K	5%	1/16W	
R419	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R420	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R421	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R422	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R423	1-216-823-11	METAL GLAZE	1.5K	5%	1/16W	
R424	1-216-823-11	METAL GLAZE	1.5K	5%	1/16W	
R425	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R426	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	
R427	1-216-824-11	METAL GLAZE	1.8K	5%	1/16W	
R428	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R429	1-216-843-11	METAL GLAZE	68K	5%	1/16W	
R430	1-216-823-11	METAL GLAZE	1.5K	5%	1/16W	
R431	1-216-789-11	METAL GLAZE	2.2	5%	1/16W	
R432	1-216-789-11	METAL GLAZE	2.2	5%	1/16W	
R433	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R434	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	
R435	1-216-789-11	METAL GLAZE	2.2	5%	1/16W	
R436	1-216-815-11	METAL GLAZE	330	5%	1/16W	
R437	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R438	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R439	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R440	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R441	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R443	1-216-836-11	METAL GLAZE	18K	5%	1/16W	
R444	1-216-848-11	METAL GLAZE	180K	5%	1/16W	
R445	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R446	1-216-848-11	METAL GLAZE	180K	5%	1/16W	
R447	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R448	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R451	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R452	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R453	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R454	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R455	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R456	1-216-801-11	METAL GLAZE	22	5%	1/16W	
R460	1-217-671-11	METAL GLAZE	1	5%	1/10W	
R461	1-217-671-11	METAL GLAZE	1	5%	1/10W	
R462	1-217-671-11	METAL GLAZE	1	5%	1/10W	
R463	1-217-671-11	METAL GLAZE	1	5%	1/10W	
R464	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R466	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R467	1-216-828-11	METAL GLAZE	3.9K	5%	1/16W	
R468	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R469	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R470	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R471	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R601	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R602	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R603	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R604	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R605	1-216-859-11	METAL GLAZE	1.5M	5%	1/16W	
R606	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R607	1-216-855-11	METAL GLAZE	680K	5%	1/16W	
R608	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R609	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R610	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R611	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R612	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R613	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R614	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R615	1-216-832-11	METAL GLAZE	8.2K	5%	1/16W	
R616	1-216-832-11	METAL GLAZE	8.2K	5%	1/16W	
R617	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	

Ref.No	Part No.	Description				Remark
R618	1-216-822-11	METAL GLAZE	1.2K	5%	1/16W	
R619	1-216-015-00	METAL GLAZE	39	5%	1/10W	
R620	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R625	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R626	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R627	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R628	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R629	1-216-842-11	METAL GLAZE	56K	5%	1/16W	
R630	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R631	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R632	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R633	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R634	1-216-304-11	METAL GLAZE	3.3	5%	1/10W	
R635	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R636	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R637	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R638	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R639	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R640	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	
R641	1-216-836-11	METAL GLAZE	18K	5%	1/16W	
R642	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R643	1-216-699-11	METAL CHIP	100K	0.50%	1/10W	
R645	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R646	1-216-822-11	METAL GLAZE	1.2K	5%	1/16W	
R647	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	
R648	1-216-819-11	METAL GLAZE	680	5%	1/16W	
R649	1-216-819-11	METAL GLAZE	680	5%	1/16W	
R650	1-216-816-11	METAL GLAZE	390	5%	1/16W	
R651	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R652	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R653	1-216-815-11	METAL GLAZE	330	5%	1/16W	
R654	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R655	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R656	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R657	1-216-811-11	METAL GLAZE	150	5%	1/16W	
R658	1-216-813-11	METAL GLAZE	220	5%	1/16W	
R659	1-216-815-11	METAL GLAZE	330	5%	1/16W	
R661	1-216-801-11	METAL GLAZE	22	5%	1/16W	
R662	1-216-820-11	METAL GLAZE	820	5%	1/16W	
R663	1-216-819-11	METAL GLAZE	680	5%	1/16W	
R664	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R665	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R668	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R669	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R670	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R671	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R672	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R673	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R674	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R675	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R676	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R679	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R684	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R685	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R686	1-216-828-11	METAL GLAZE	3.9K	5%	1/16W	
R687	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R688	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R689	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R690	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	
R691	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R692	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R694	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R695	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R698	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R699	1-216-822-11	METAL GLAZE	1.2K	5%	1/16W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R701	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R702	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R704	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R705	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R707	1-216-818-11	METAL GLAZE	560	5%	1/16W	
R708	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R709	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R710	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R711	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R712	1-216-822-11	METAL GLAZE	1.2K	5%	1/16W	
R714	1-216-822-11	METAL GLAZE	1.2K	5%	1/16W	
R715	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R717	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R718	1-216-828-11	METAL GLAZE	3.9K	5%	1/16W	
R719	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R720	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R721	1-216-832-11	METAL GLAZE	8.2K	5%	1/16W	
R723	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	
R724	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R725	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R726	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R727	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R728	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R730	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R753	1-216-823-11	METAL GLAZE	1.5K	5%	1/16W	
R754	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R755	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R801	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R804	1-216-811-11	METAL GLAZE	150	5%	1/16W	
R805	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R806	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R807	1-216-816-11	METAL GLAZE	390	5%	1/16W	
R808	1-216-818-11	METAL GLAZE	560	5%	1/16W	
R809	1-216-823-11	METAL GLAZE	1.5K	5%	1/16W	
R810	1-216-819-11	METAL GLAZE	680	5%	1/16W	
R811	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R812	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R813	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R814	1-216-811-11	METAL GLAZE	150	5%	1/16W	
R815	1-216-813-11	METAL GLAZE	220	5%	1/16W	
R816	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R817	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R818	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R819	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R820	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R821	1-216-811-11	METAL GLAZE	150	5%	1/16W	
R822	1-216-823-11	METAL GLAZE	1.5K	5%	1/16W	
R823	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R824	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R825	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R826	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R827	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R829	1-216-813-11	METAL GLAZE	220	5%	1/16W	
R830	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R831	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R832	1-216-844-11	METAL GLAZE	82K	5%	1/16W	
R833	1-216-022-00	METAL GLAZE	75	5%	1/10W	
R834	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R835	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R836	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R837	1-216-849-11	METAL GLAZE	220K	5%	1/16W	
R838	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R839	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R840	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R841	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R842	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R843	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R844	1-216-820-11	METAL GLAZE	820	5%	1/16W	
R845	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R846	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R847	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R849	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R850	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R851	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R852	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R855	1-216-813-11	METAL GLAZE	220	5%	1/16W	
R856	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R857	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R860	1-216-813-11	METAL GLAZE	220	5%	1/16W	
R861	1-216-818-11	METAL GLAZE	560	5%	1/16W	
R862	1-216-819-11	METAL GLAZE	680	5%	1/16W	
R863	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R864	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R865	1-216-832-11	METAL GLAZE	8.2K	5%	1/16W	
R867	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R868	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R869	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R870	1-216-816-11	METAL GLAZE	390	5%	1/16W	
R873	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R875	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R876	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R877	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R878	1-216-812-11	METAL GLAZE	180	5%	1/16W	
R879	1-216-818-11	METAL GLAZE	560	5%	1/16W	
R880	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R882	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R885	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R886	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R889	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R890	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R891	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R892	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R893	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R894	1-216-811-11	METAL GLAZE	150	5%	1/16W	
R895	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R901	1-216-789-11	METAL GLAZE	2.2	5%	1/16W	
R902	1-216-789-11	METAL GLAZE	2.2	5%	1/16W	
R906	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R907	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R908	1-216-815-11	METAL GLAZE	330	5%	1/16W	
R909	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R911	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R912	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R913	1-216-861-11	METAL GLAZE	2.2M	5%	1/16W	
R914	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R915	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R916	1-216-849-11	METAL GLAZE	220K	5%	1/16W	
R921	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R923	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R924	1-216-832-11	METAL GLAZE	8.2K	5%	1/16W	
R925	1-218-270-11	METAL GLAZE	1.1K	5%	1/16W	
R926	1-216-822-11	METAL GLAZE	1.2K	5%	1/16W	
R927	1-216-645-11	METAL CHIP	560	0.50%	1/10W	
R928	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R932	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R933	1-216-816-11	METAL GLAZE	390	5%	1/16W	
R935	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R936	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R937	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R938	1-216-821-11	METAL GLAZE	1K	5%	1/16W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
R939	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R940	1-216-001-00	METAL GLAZE 10 5% 1/10W	
R941	1-216-819-11	METAL GLAZE 680 5% 1/16W	
R942	1-216-814-11	METAL GLAZE 270 5% 1/16W	
R944	1-216-819-11	METAL GLAZE 680 5% 1/16W	
R946	1-216-827-11	METAL GLAZE 3.3K 5% 1/16W	
R948	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R950	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R952	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R953	1-216-819-11	METAL GLAZE 680 5% 1/16W	
R954	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R955	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R956	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R958	1-216-829-11	METAL GLAZE 4.7K 5% 1/16W	
R959	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R961	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R963	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R965	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R968	1-216-829-11	METAL GLAZE 4.7K 5% 1/16W	
R969	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R970	1-216-816-11	METAL GLAZE 390 5% 1/16W	
R971	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R972	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R974	1-216-841-11	METAL GLAZE 47K 5% 1/16W	
R978	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R979	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R986	1-216-835-11	METAL GLAZE 15K 5% 1/16W	

NETWORK

Ref.No	Part No.	Description	Remark
RB101	1-236-412-11	NETWORK, RES 1.0K	
RB102	1-236-433-11	NETWORK, RES 56K	
RB103	1-236-433-11	NETWORK, RES 56K	
RB104	1-236-424-11	NETWORK, RES 10K	
RB105	1-236-424-11	NETWORK, RES 10K	
RB106	1-236-424-11	NETWORK, RES 10K	
RB107	1-236-424-11	NETWORK, RES 10K	
RB108	1-236-424-11	NETWORK, RES 10K	
RB109	1-236-424-11	NETWORK, RES 10K	
RB110	1-236-424-11	NETWORK, RES 10K	
RB111	1-236-412-11	NETWORK, RES 1.0K	
RB112	1-236-424-11	NETWORK, RES 10K	
RB113	1-236-424-11	NETWORK, RES 10K	
RB115	1-236-412-11	NETWORK, RES 1.0K	
RB116	1-236-412-11	NETWORK, RES 1.0K	
RB117	1-236-412-11	NETWORK, RES 1.0K	
RB118	1-236-412-11	NETWORK, RES 1.0K	
RB119	1-236-412-11	NETWORK, RES 1.0K	
RB120	1-236-412-11	NETWORK, RES 1.0K	
RB121	1-236-412-11	NETWORK, RES 1.0K	
RB122	1-236-424-11	NETWORK, RES 10K	
RB123	1-236-424-11	NETWORK, RES 10K	
RB130	1-236-424-11	NETWORK, RES 10K	
RB131	1-236-424-11	NETWORK, RES 10K	
RB132	1-236-436-11	NETWORK, RES 100K	
RB201	1-236-412-11	NETWORK, RES 1.0K	
RB202	1-236-412-11	NETWORK, RES 1.0K	
RB203	1-236-412-11	NETWORK, RES 1.0K	
RB204	1-236-412-11	NETWORK, RES 1.0K	
RB205	1-236-412-11	NETWORK, RES 1.0K	
RB206	1-236-412-11	NETWORK, RES 1.0K	
RB207	1-236-412-11	NETWORK, RES 1.0K	
RB208	1-236-412-11	NETWORK, RES 1.0K	
RB209	1-236-412-11	NETWORK, RES 1.0K	
RB210	1-236-412-11	NETWORK, RES 1.0K	
RB211	1-236-412-11	NETWORK, RES 1.0K	
RB212	1-236-412-11	NETWORK, RES 1.0K	
RB213	1-236-412-11	NETWORK, RES 1.0K	
RB214	1-236-424-11	NETWORK, RES 10K	
RB215	1-236-424-11	NETWORK, RES 10K	
RB216	1-236-424-11	NETWORK, RES 10K	
RB217	1-236-424-11	NETWORK, RES 10K	
RB218	1-236-424-11	NETWORK, RES 10K	
RB219	1-236-424-11	NETWORK, RES 10K	
RB220	1-236-424-11	NETWORK, RES 10K	
RB221	1-236-424-11	NETWORK, RES 10K	
RB222	1-236-424-11	NETWORK, RES 10K	
RB223	1-236-412-11	NETWORK, RES 1.0K	
RB224	1-236-424-11	NETWORK, RES 10K	
RB225	1-236-412-11	NETWORK, RES 1.0K	
RB227	1-236-412-11	NETWORK, RES 1.0K	
RB801	1-236-412-11	NETWORK, RES 1.0K	
RB802	1-236-412-11	NETWORK, RES 1.0K	
RB803	1-236-412-11	NETWORK, RES 1.0K	
RB804	1-236-412-11	NETWORK, RES 1.0K	
RB921	1-236-412-11	NETWORK, RES 1.0K	
RB922	1-236-412-11	NETWORK, RES 1.0K	
RB923	1-236-412-11	NETWORK, RES 1.0K	
RB924	1-236-424-11	NETWORK, RES 10K	
RB925	1-236-412-11	NETWORK, RES 1.0K	
RB926	1-236-412-11	NETWORK, RES 1.0K	
RB927	1-236-420-11	NETWORK, RES 4.7K	
RB929	1-236-412-11	NETWORK, RES 1.0K	
RB930	1-236-412-11	NETWORK, RES 1.0K	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV301	1-238-090-11	RES, ADJ CERMET 10K	
RV401	1-238-087-11	RES, ADJ CERMET 1K	
RV402	1-238-089-11	RES, ADJ CERMET 4.7K	
RV601	1-238-092-11	RES, ADJ CERMET 47K	
RV602	1-238-089-11	RES, ADJ CERMET 4.7K	
RV603	1-238-088-11	RES, ADJ, CERMET 2.2K	
RV604	1-238-091-11	RES, ADJ CERMET 22K	
RV605	1-238-088-11	RES, ADJ, CERMET 2.2K	
RV606	1-238-086-11	RES, ADJ CERMET 470	
RV607	1-238-088-11	RES, ADJ, CERMET 2.2K	
RV608	1-238-092-11	RES, ADJ CERMET 47K	
RV609	1-238-087-11	RES, ADJ CERMET 1K	
RV701	1-238-087-11	RES, ADJ CERMET 1K	
RV802	1-238-087-11	RES, ADJ CERMET 1K	
RV923	1-230-868-11	RES, ADJ, METAL GLAZE 2.2K	

THERMISTOR

Ref.No	Part No.	Description	Remark
TH301	1-800-200-00	THERMISTOR	

CRYSTAL

Ref.No	Part No.	Description	Remark
X101	1-527-997-21	VIBRATOR, CRYSTAL	
X102	1-577-118-11	VIBRATOR, LITHIUM NIOBATE	
X201	1-577-349-21	VIBRATOR, CRYSTAL	
X701	1-577-080-11	VIBRATOR, CRYSTAL	
X921	1-577-290-21	VIBRATOR, CRYSTAL	

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A-7061-935-A CC-32 BOARD, COMPLETE (Ref. No. 5000 series)

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CAPACITOR

Ref.No	Part No.	Description	Remark
C001	1-162-946-11	CERAMIC CHIP 27PF 5% 50V	
C003	1-135-180-21	TANTAL CHIP 3.3MF 20% 6.3V	
C004	1-162-974-11	CERAMIC CHIP 0.01MF 50V	
C005	1-162-946-11	CERAMIC CHIP 27PF 5% 50V	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description			Remark
C006	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C007	1-162-946-11	CERAMIC CHIP	27PF	5%	50V
C008	1-135-180-21	TANTAL. CHIP	3.3MF	20%	6.3V
C009	1-162-946-11	CERAMIC CHIP	27PF	5%	50V
C010	1-164-360-11	CERAMIC CHIP	0.1MF		16V
C011	1-162-946-11	CERAMIC CHIP	27PF	5%	50V
C013	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C015	1-135-180-21	TANTAL. CHIP	3.3MF	20%	6.3V
C016	1-162-946-11	CERAMIC CHIP	27PF	5%	50V
C017	1-162-974-11	CERAMIC CHIP	0.01MF		50V
C018	1-162-946-11	CERAMIC CHIP	27PF	5%	50V

IC

IC001	8-752-329-49	IC CXL5502M-2

COIL

L001	1-410-988-11	INDUCTOR CHIP	0.39UH
L002	1-410-988-11	INDUCTOR CHIP	0.39UH
L003	1-412-031-11	INDUCTOR CHIP	47UH
L004	1-410-988-11	INDUCTOR CHIP	0.39UH
L005	1-410-988-11	INDUCTOR CHIP	0.39UH
L008	1-412-031-11	INDUCTOR CHIP	47UH
L009	1-410-988-11	INDUCTOR CHIP	0.39UH
L010	1-410-988-11	INDUCTOR CHIP	0.39UH

RESISTOR

R001	1-216-857-11	METAL GLAZE	1M	5%	1/16W
R002	1-216-823-11	METAL GLAZE	1.5K	5%	1/16W
R003	1-216-821-11	METAL GLAZE	1K	5%	1/16W
R004	1-216-844-11	METAL GLAZE	82K	5%	1/16W
R005	1-216-864-11	METAL GLAZE	0	5%	1/16W
R007	1-216-864-11	METAL GLAZE	0	5%	1/16W

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*A-7062-317-A TU-123 BOARD, COMPLETE (Ref. No. 6000 series)

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3-744-166-01	HOLDER, ANTENNA
3-746-907-01	LID, TDD SHIELD CASE
3-746-908-01	LID, REAR, TDD SHIELD CASE
3-746-915-01	LID, REAR, TU SHIELD CASE
3-741-147-01	CAP, PS SHIELD

CAPACITOR

C001	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C002	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C004	1-164-005-11	CERAMIC CHIP	0.47MF		25V
C005	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V
C006	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C007	1-164-005-11	CERAMIC CHIP	0.47MF		25V
C008	1-164-005-11	CERAMIC CHIP	0.47MF		25V
C009	1-126-205-11	ELECT CHIP	47MF	20%	6.3V
C010	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C011	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C012	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C015	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C019	1-163-090-00	CERAMIC CHIP	7PF	0.25PF	50V
C020	1-163-090-00	CERAMIC CHIP	7PF	0.25PF	50V
C022	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C023	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C024	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C025	1-135-217-21	TANTAL. CHIP	15MF	20%	6.3V
C026	1-135-217-21	TANTAL. CHIP	15MF	20%	6.3V
C027	1-135-149-21	TANTAL. CHIP	2.2MF	20%	10V

Ref.No	Part No.	Description			Remark
C029	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C030	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C031	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C032	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C033	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C034	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V
C035	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C038	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C039	1-163-163-00	CERAMIC CHIP	18PF	5%	50V
C041	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V
C042	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C044	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C045	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V
C046	1-135-181-21	TANTAL. CHIP	4.7MF	20%	6.3V
C048	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C049	1-126-205-11	ELECT CHIP	47MF	20%	6.3V
C055	1-135-217-21	TANTAL. CHIP	15MF	20%	6.3V
C056	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C057	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V
C058	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C059	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C060	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C061	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C070	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V
C071	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C072	1-135-181-21	TANTAL. CHIP	4.7MF	20%	6.3V
C073	1-135-181-21	TANTAL. CHIP	4.7MF	20%	6.3V
C074	1-135-181-21	TANTAL. CHIP	4.7MF	20%	6.3V
C075	1-136-707-11	FILM CHIP	0.012MF	5%	25
C076	1-136-703-11	FILM CHIP	0.0056MF	5%	25V
C078	1-135-202-21	TANTAL. CHIP	22MF	20%	4V
C079	1-136-699-11	FILM CHIP	0.0027MF	5%	25V
C080	1-135-181-21	TANTAL. CHIP	4.7MF	20%	6.3V
C081	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V
C082	1-135-181-21	TANTAL. CHIP	4.7MF	20%	6.3V
C083	1-135-181-21	TANTAL. CHIP	4.7MF	20%	6.3V
C084	1-135-177-21	TANTAL. CHIP	1MF	20%	25V
C085	1-135-180-21	TANTAL. CHIP	3.3MF	20%	6.3V
C086	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C088	1-164-634-11	CERAMIC CHIP	1MF		16V
C089	1-164-634-11	CERAMIC CHIP	1MF		16V
C090	1-135-177-21	TANTAL. CHIP	1MF	20%	25V
C091	1-135-177-21	TANTAL. CHIP	1MF	20%	25V
C110	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V
C111	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C112	1-163-036-00	CERAMIC CHIP	0.068MF		50V
C113	1-163-036-00	CERAMIC CHIP	0.068MF		50V
C114	1-163-036-00	CERAMIC CHIP	0.068MF		50V
C115	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C501	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V
C502	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C503	1-135-217-21	TANTAL. CHIP	15MF	20%	6.3V
C504	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C505	1-163-011-11	CERAMIC CHIP	0.0015MF	10%	50V
C506	1-126-204-11	ELECT CHIP	47MF	20%	16V
C507	1-135-156-21	TANTAL. CHIP	6.8MF	20%	10V
C508	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C509	1-124-779-00	ELECT CHIP	10MF	20%	16V
C510	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C511	1-126-200-11	ELECT CHIP	10MF	20%	35V
C512	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C513	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C514	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C515	1-135-156-21	TANTAL. CHIP	6.8MF	20%	10V
C516	1-163-038-00	CERAMIC CHIP	0.1MF		25V

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description			Remark
C517	1-135-153-21	TANTAL CHIP	2.2MF	20%	25V
C518	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C520	1-126-602-11	ELECT CHIP	3.3MF	20%	50V
C521	1-163-036-00	CERAMIC CHIP	0.068MF		50V
C522	1-135-155-21	TANTAL CHIP	4.7MF	20%	16V
C524	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C525	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C526	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C527	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V

CERAMIC FILTER

CF001	1-409-332-00	CERAMIC TRAP (4.5MHZ)
CF002	1-577-610-11	DISCRIMINATOR, CERAMIC
CF003	1-577-559-11	FILTER, CERAMIC

CONNECTOR

CN001	1-569-634-11	CONNECTOR, BOARD TO BOARD 30P
CN002	1-566-523-11	CONNECTOR, FPC (ZIF) 7P
CN003	*1-565-541-11	PIN, CONNECTOR (PC BOARD) 2P

DIODE

D001	8-719-400-18	DIODE MA152WK
D501	8-719-400-18	DIODE MA152WK
D502	8-719-400-18	DIODE MA152WK
D503	8-719-400-18	DIODE MA152WK
D504	8-719-400-18	DIODE MA152WK
D601	8-719-106-44	DIODE RD9.1M-B2

FERRITE BEAD RING

FB501	1-412-390-21	INDUCTOR CHIP	0UH
FB502	1-412-390-21	INDUCTOR CHIP	0UH

IC

IC001	8-759-634-94	IC M52018FP
IC002	8-759-634-94	IC M52018FP
IC003	8-752-035-70	IC CXA1124AQ
IC004	8-759-030-05	IC LM393ML
IC501	8-759-979-50	IC FA7610N
IC502	8-759-157-40	IC UPC574J

ISOLATION

IU001	1-466-330-11	AMPLIFIER, ISOLATION (RA-1)

JACK

J001	1-507-921-00	JACK
J601	1-563-282-21	JACK, SMALL TYPE
J602	1-563-282-21	JACK, SMALL TYPE

COIL

L002	1-412-168-11	INDUCTOR	0.33UH
L003	1-410-989-11	INDUCTOR CHIP	0.47UH
L004	1-412-029-11	INDUCTOR CHIP	10UH
L006	1-412-029-11	INDUCTOR CHIP	10UH
L009	1-410-383-31	INDUCTOR CHIP	15UH
L010	1-410-382-31	INDUCTOR CHIP	12UH
L013	1-410-998-31	INDUCTOR CHIP	2.7UH
L014	1-410-994-11	INDUCTOR CHIP	1.2UH
L015	1-412-029-11	INDUCTOR CHIP	10UH
L016	1-412-029-11	INDUCTOR CHIP	10UH
L017	1-412-031-11	INDUCTOR CHIP	47UH
L501	1-412-028-11	INDUCTOR CHIP	4.7UH
L502	1-412-028-11	INDUCTOR CHIP	4.7UH
L503	1-412-028-11	INDUCTOR CHIP	4.7UH
L505	1-412-030-11	INDUCTOR CHIP	22UH

TRANSISTOR

Ref.No	Part No.	Description
Q001	8-729-230-99	TRANSISTOR 2SC2669
Q003	8-729-901-47	TRANSISTOR DTA143EK
Q004	8-729-901-47	TRANSISTOR DTA143EK
Q005	8-729-901-47	TRANSISTOR DTA143EK
Q006	8-729-100-66	TRANSISTOR 2SC1623
Q009	8-729-100-66	TRANSISTOR 2SC1623
Q010	8-729-216-22	TRANSISTOR 2SA1162
Q012	8-729-100-66	TRANSISTOR 2SC1623
Q015	8-729-100-66	TRANSISTOR 2SC1623
Q020	8-729-901-01	TRANSISTOR DTC144EK
Q104	8-729-100-66	TRANSISTOR 2SC1623
Q105	8-729-601-58	TRANSISTOR 2SC3053
Q501	8-729-421-15	TRANSISTOR 2SD1119-Q
Q502	8-729-901-06	TRANSISTOR DTA144EK
Q503	8-729-901-01	TRANSISTOR DTC144EK

RESISTOR

Ref.No	Part No.	Description			Remark
R002	1-216-295-00	METAL GLAZE	0	5%	1/10W
R003	1-216-295-00	METAL GLAZE	0	5%	1/10W
R006	1-216-021-00	METAL GLAZE	68	5%	1/10W
R007	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R008	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W
R009	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R010	1-216-019-00	METAL GLAZE	56	5%	1/10W
R015	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R016	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R017	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R018	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R022	1-216-091-00	METAL GLAZE	56K	5%	1/10W
R023	1-216-091-00	METAL GLAZE	56K	5%	1/10W
R024	1-216-295-00	METAL GLAZE	0	5%	1/10W
R025	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R026	1-216-025-00	METAL GLAZE	100	5%	1/10W
R027	1-216-037-00	METAL GLAZE	330	5%	1/10W
R028	1-216-037-00	METAL GLAZE	330	5%	1/10W
R029	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R030	1-216-025-00	METAL GLAZE	100	5%	1/10W
R032	1-216-025-00	METAL GLAZE	100	5%	1/10W
R033	1-216-027-00	METAL GLAZE	120	5%	1/10W
R036	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W
R038	1-216-121-00	METAL GLAZE	1M	5%	1/10W
R039	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R040	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W
R041	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W
R042	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W
R045	1-216-079-00	METAL GLAZE	18K	5%	1/10W
R046	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R047	1-216-079-00	METAL GLAZE	18K	5%	1/10W
R048	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R049	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R052	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R053	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R054	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R055	1-216-033-00	METAL GLAZE	220	5%	1/10W
R056	1-216-045-00	METAL GLAZE	680	5%	1/10W
R057	1-216-037-00	METAL GLAZE	330	5%	1/10W
R058	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R059	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R074	1-216-691-11	METAL CHIP	47K	0.50%	1/10W
R075	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R076	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R077	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R078	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W
R079	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
R080	1-216-690-11	METAL CHIP 43K 0.50% 1/10W	
R082	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R083	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R084	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R085	1-216-748-11	METAL GLAZE 39K 5% 1/10W	
R086	1-216-075-00	METAL GLAZE 12K 5% 1/10W	
R087	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R088	1-216-045-00	METAL GLAZE 680 5% 1/10W	
R089	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R092	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R093	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R102	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R103	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R104	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R105	1-216-109-00	METAL GLAZE 330K 5% 1/10W	
R106	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R107	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R108	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R109	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R110	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R501	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W	
R502	1-216-091-00	METAL GLAZE 56K 5% 1/10W	
R503	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	
R504	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R505	1-216-117-00	METAL GLAZE 680K 5% 1/10W	
R506	1-216-748-11	METAL GLAZE 39K 5% 1/10W	
R507	1-216-103-00	METAL GLAZE 180K 5% 1/10W	
R508	1-216-001-00	METAL GLAZE 10 5% 1/10W	
R509	1-216-105-00	METAL GLAZE 220K 5% 1/10W	
R511	1-216-009-00	METAL GLAZE 22 5% 1/10W	
R512	1-216-043-00	METAL GLAZE 560 5% 1/10W	
R513	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R514	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R516	1-216-043-00	METAL GLAZE 560 5% 1/10W	
R517	1-216-043-00	METAL GLAZE 560 5% 1/10W	
R518	1-216-043-00	METAL GLAZE 560 5% 1/10W	
R520	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W	
R521	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R601	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R602	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R603	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R604	1-216-025-00	METAL GLAZE 100 5% 1/10W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV001	1-238-089-11	RES, ADJ CERMET 4.7K	
RV003	1-238-090-11	RES, ADJ CERMET 10K	
RV004	1-238-090-11	RES, ADJ CERMET 10K	
RV005	1-238-089-11	RES, ADJ CERMET 4.7K	
RV006	1-238-092-11	RES, ADJ CERMET 47K	
RV007	1-238-091-11	RES, ADJ CERMET 22K	
RV501	1-238-087-11	RES, ADJ CERMET 1K	

FILTER

Ref.No	Part No.	Description	Remark
SWF001	1-579-111-11	FILTER, SAW	

COIL

Ref.No	Part No.	Description	Remark
T001	1-460-077-11	COIL	
T002	1-460-076-11	COIL	
T003	1-460-076-11	COIL	
T004	1-460-076-11	COIL	

TRANSFORMER

Ref.No	Part No.	Description	Remark
T501	1-450-107-11	TRANSFORMER, DC-DC CONVERTER	

When indicating parts by reference number, please include the board name.

TUNER

Ref.No	Part No.	Description	Remark
TU001	1-465-453-11	TUNER, ET (BT-KA301)	

****

Ref.No	Part No.	Description	Remark
	*1-634-347-11	UC-6 BOARD, COMPLETE *****************	(Ref. No. 8000 series)
	3-746-939-01	INSULATOR, UC	

CONNECTOR

Ref.No	Part No.	Description	Remark
CN001	1-566-529-11	CONNECTOR, FPC (ZIF) 13P	
CN002	1-566-527-11	CONNECTOR, FPC (ZIF) 11P	
CN003	1-566-547-11	CONNECTOR, FPC (NON ZIF) 15P	

****

Ref.No	Part No.	Description	Remark
	*1-634-345-11	CN-6 BOARD, COMPLETE *****************	(Ref. No. 3000 series)

CONNECTOR

Ref.No	Part No.	Description	Remark
CN601	1-566-544-41	CONNECTOR, FPC (NON ZIF) 12P	
CN602	1-565-527-11	PIN, CONNECTOR (PC BOARD) 2P	

DIODE

Ref.No	Part No.	Description	Remark
D602	8-719-106-43	DIODE RD9.1M-B1	
D603	8-719-106-43	DIODE RD9.1M-B1	
D604	8-719-106-43	DIODE RD9.1M-B1	
D605	8-719-106-43	DIODE RD9.1M-B1	
D606	8-719-106-43	DIODE RD9.1M-B1	
D608	8-719-105-91	DIODE RD5.6M-B2	

JACK

Ref.No	Part No.	Description	Remark
J601	1-562-952-11	CONNECTOR 12P	

****

Ref.No	Part No.	Description	Remark
	A-7071-210-A	DC-22 BOARD, COMPLETE *****************	(Ref. No. 8000 series)
	1-575-823-11	CABLE, FLAT (1.0MM PITCH) 16P	
	*3-744-170-01	HOLDER, DC	
	3-746-959-01	SPACER, DC	

FUSE

Ref.No	Part No.	Description	Remark
F701	⚠1-532-777-21	FUSE, MICRO (SECONDARY) 1.25A 125V	
F702	⚠1-532-777-21	FUSE, MICRO (SECONDARY) 1.25A 125V	
F703	⚠1-532-777-21	FUSE, MICRO (SECONDARY) 1.25A 125V	
F704	⚠1-532-777-21	FUSE, MICRO (SECONDARY) 1.25A 125V	
F705	⚠1-532-777-21	FUSE, MICRO (SECONDARY) 1.25A 125V	
F706	⚠1-532-777-21	FUSE, MICRO (SECONDARY) 1.25A 125V	

JACK

Ref.No	Part No.	Description	Remark
J701	1-568-727-11	JACK, (DC IN)	
J702	1-537-241-11	TERMINAL BOARD (BATTERY)	

****

Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No	Part No.	Description	Remark
	*A-7071-211-A	KB-10 (A) BOARD, COMPLETE *****************	(Ref. No. 8000 series)
	*3-744-130-01	HOLDER (PC), LED	
		CONNECTOR	
CN802	1-566-760-11	PIN, CONNECTOR (PC BOARD) 5P	
		DIODE	
D801	8-719-970-40	DIODE GL-1EG11	
D803	8-719-918-65	DIODE GL-1PR102	
D804	8-719-918-65	DIODE GL-1PR102	
D805	8-719-918-65	DIODE GL-1PR102	
D808	8-719-951-22	DIODE IMN10	
D809	8-719-951-22	DIODE IMN10	
D810	8-719-104-34	DIODE 1S2836	
		TRANSISTOR	
Q801	8-729-403-24	TRANSISTOR XN4210	
Q802	8-729-403-24	TRANSISTOR XN4210	
Q803	8-729-403-24	TRANSISTOR XN4210	
Q804	8-729-920-48	TRANSISTOR IMH2	
		RESISTOR	
R801	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R803	1-216-037-00	METAL GLAZE 330 5% 1/10W	
R804	1-216-037-00	METAL GLAZE 330 5% 1/10W	
R805	1-216-037-00	METAL GLAZE 330 5% 1/10W	
R807	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R808	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
		SWITCH	
S801	1-572-344-11	SWITCH, SLIDE (POWER)	
S802	1-572-078-11	SWITCH, TACTILE (CHANNEL −)	
S803	1-572-078-11	SWITCH, TACTILE (CHANNEL +)	
S805	1-571-102-11	SWITCH, SLIDE (EJECT)	
S806	1-572-078-11	SWITCH, TACTILE (REW)	
S807	1-572-078-11	SWITCH, TACTILE (FF)	
S808	1-572-078-11	SWITCH, TACTILE (PLAY)	
S809	1-572-078-11	SWITCH, TACTILE (STOP)	
S810	1-572-078-11	SWITCH, TACTILE (PAUSE)	
S811	1-571-102-11	SWITCH, SLIDE (REC)	
S812	1-572-078-11	SWITCH, TACTILE (STEP)	
S813	1-572-078-11	SWITCH, TACTILE (INDEX MODE)	

* *

Ref.No	Part No.	Description	Remark
	*1-634-346-11	SB-3 BOARD ********	(Ref. No. 6000 series)
		CONNECTOR	
CN901	1-566-539-11	CONNECTOR, FPC (NON ZIF) 7P	
		RESISTOR	
R903	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R904	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R905	1-216-101-00	METAL GLAZE 150K 5% 1/10W	
R906	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R907	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R908	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
		SWITCH	
S903	1-572-078-11	SWITCH, TACTILE (INDEX MARK)	
S904	1-572-078-11	SWITCH, TACTILE (INDEX ERASE)	
S905	1-572-078-11	SWITCH, TACTILE (SP/LP)	
S906	1-572-078-11	SWITCH, TACTILE (CLEAR)	
S907	1-572-078-11	SWITCH, TACTILE (POSITION)	
S908	1-572-078-11	SWITCH, TACTILE (PRESET)	
S909	1-572-078-11	SWITCH, TACTILE (SEEK)	
S910	1-572-078-11	SWITCH, TACTILE (INPUT SELECT)	
S911	1-571-275-31	SWITCH, SLIDE (AUTO STEREO)	

* *

ACCESSORIES & PACKING MATERIALS

* *

Part No.	Description
1-417-173-11	DISTRIBUTOR, ANTENNA
⚠1-528-174-31	BATTERY, LITHIUM (CR2032 TYPE)
2-366-919-00	BAG, PROTECTION
3-701-625-00	BAG, POLYETHYLENE
3-728-996-01	CASE, SOFT
*3-744-184-01	CUSHION (UPPER)
*3-744-185-01	CUSHION (LOWER)
3-751-853-21	MANUAL, INSTRUCTION (ENGLISH)
3-751-853-31	MANUAL, INSTRUCTION (FRENCH)(CND MODEL)

When indicating parts by reference number, please include the board name.

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

* *

MISCELLANEOUS

* * * * * * * * * * *

Ref.No	Part No.	Description	Remark
	⚠1-466-333-11	INVERTER UNIT, DC-AC	
	1-466-334-11	SWITCH BLOCK, CONTROL	
	1-544-323-11	SPEAKER	
	1-569-346-11	CONNECTOR, FPC (TRANSLATION) 10P	
	1-569-347-11	CONNECTOR, FPC (TRANSLATION) 13P	
	1-572-253-11	SWITCH, SLIDE (ENCODER)	
	1-575-856-11	CABLE, FLAT (1.0MM PITCH) 7 CORE	
	1-575-857-11	CABLE, FLAT (1.0MM PITCH) 12 CORE	
	1-575-858-11	CABLE, FLAT (1.0MM PITCH) 16 CORE (LCD FLEXIBLE)	
	1-575-859-11	CABLE, FLAT (1.0MM PITCH) 15 CORE	
	1-628-060-12	FP-89 FLEXIBLE BOARD	
	1-628-061-12	FP-90 FLEXIBLE BOARD	
	1-634-994-11	FP-271 FLEXIBLE BOARD	
	1-634-995-11	FP-272 FLEXIBLE BOARD	
	1-634-996-11	FP-273 FLEXIBLE BOARD	
	1-634-997-11	FP-274 FLEXIBLE BOARD	
	1-808-505-12	SENSOR (DEW)	
AN901	1-501-456-11	ANTENNA, TELESCOPIC	
BL901	1-518-668-11	TUBE UNIT, FLUORECENT	
D301	8-719-820-44	PHOTO COUPLER TLP907-0 (SONY2)	
D302	8-719-940-81	DIODE GL452S	
D303	8-719-820-44	PHOTO COUPLER TLP907-0 (SONY2)	
LCD901	1-809-002-11	DISPLAY MODULE, LIQUID CRYSTAL	
M902	8-835-331-01	MOTOR, DC U-22A (CAPSTAN)	
M903	A-7040-208-A	MOTOR ASSY, THREADING (LOADING)	
Q301	8-729-906-48	EE-TP109	
Q302	8-729-906-48	EE-TP109	
S302	1-572-298-11	SWITCH, PUSH (ME/MP, MP HG, REC PROOF)	
S901	1-571-099-11	SWITCH (CASSETTE DOWN)	

HARDWARE

Ref.No	Part No.	Description	Remark
		SCREW	
	7-627-553-37	SCREW (M2X3), SPECIAL HEAD	
	7-627-555-88	SCREW (M1.4X1.8)	
		PRECISION SCREW	
	7-627-553-18	SCREW,PRECISION +P 2X2	
	7-627-555-88	SCREW, PRECISION +P 1.4X1.8	
	7-627-452-48	SCREW,PRECISION +RK 2X2.5	
	7-627-553-37	PRECISION SCREW +P 2X3 TYPE 3	
	7-627-553-68	SCREW, PRECISION +P 2X6 TYPE3	
		NUT	
	7-684-023-04	N 3, TYPE 2	
		WASHER	
	7-623-208-22	SW 3,TYPE 2	
	7-688-003-01	W 3, SMALL	

When indicating parts by reference number, please include the board name.

Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

SECTION 7
MECHANICAL ADJUSTMENTS

For Mechanical Adjustments

Refer to mechanical adjustment (8 mm Video MECHANICAL ADJUSTMENT MANUAL III) manual for the adjustments and checks of mechanism section and the mechanical parts replacement. (9-972-732-11)

For setting of the track shift mode, however, refer to the following.

7-1. SETTING THE TRACK SHIFT MODE

[Setting Method]

1) Setting the test mode* 0011 (Jig switching position 3)

CN802

1	TEST B
2	GND
3	TEST A
4	TEST C
5	TEST D

Jig switching position 3

*Refer to 「8-1-7. Test mode」.

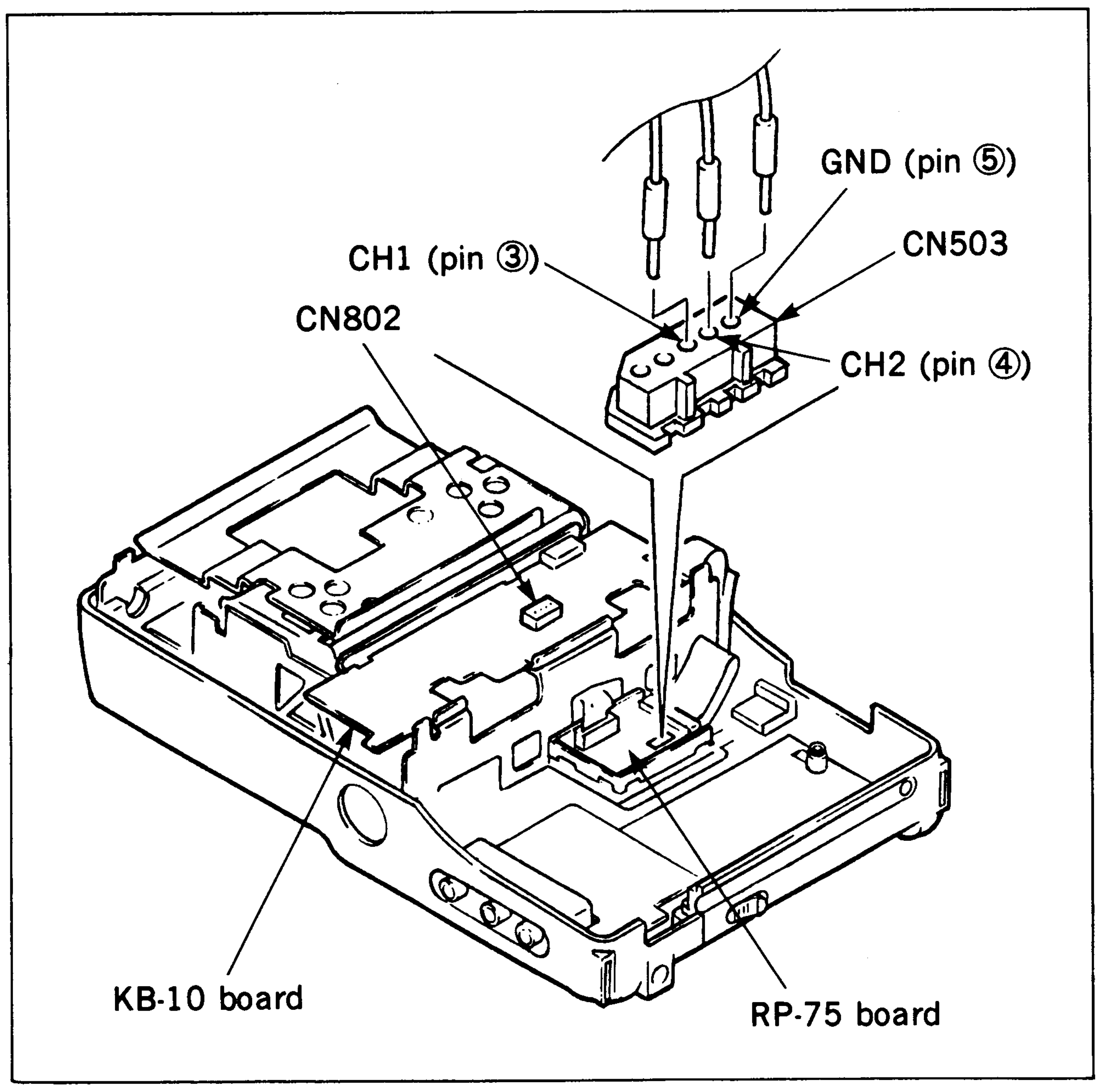


Fig. 7-1.

7-2. PREPARATION FOR ADJUSTMENT

1) Clean the tape running surfaces (tape guide, drum, capstan shaft, pinch roller.)
2) Connect to the oscilloscope.
   CH1 : RP-75 board CN503 pin ③ (PB RF)
   CH2 : RP-75 board CN503 pin ④ (SWP)
3) Play back the tracking alignment tape (WR5-1NP) (8-967-995-02).
4) Check that the RF waveform of the oscilloscope is flat at both inlet and outlet sides. When not flat, make adjustment as follows. (Refer to mechanical adjustment manual.)

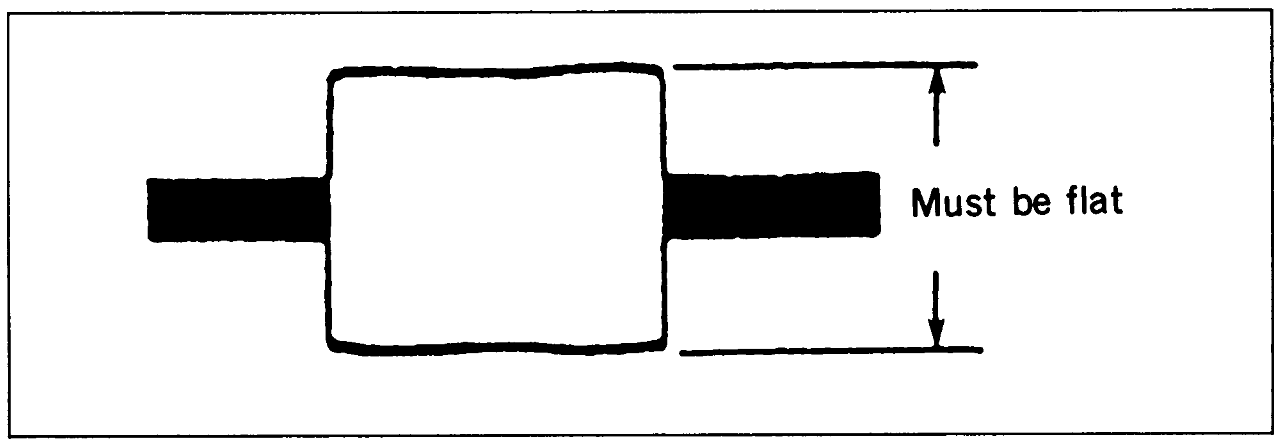


Fig. 7-2.

SECTION 8
ELECTRICAL ADJUSTMENTS

See the adjusting parts location diagram from on page 184 for the adjustment.

8-1. PREPARATION FOR ADJUSTMENT

The following measurement instruments are used for the electric adjustment.

8-1-1. Using Instruments

1) Monitor TV
2) Oscilloscope having two phenomena, band of 10MHz or more, and the delay mode.
3) Frequency counter
4) Pattern generator (having the video output terminal)
5) Digital voltmeter
6) Audio generator
7) Audio level meter
8) Audio distortion rate meter
9) Audio attenuator
10) Stabilized power source
11) Alignment tape
    - For tracking adjustment
      (WR5-1NP) Part code: 8-967-995-02
    - For checking of SP mode operation
      (WR5-5NSP) Part code: 8-967-995-42
      (WR5-4NSP) Part code: 8-967-995-41
    - For checking of LP mode operation
      (WR5-4NL) Part code: 8-967-995-51
    - For Hi 8 SP mode operation
      (WR5-8NSE) Part code: 8-967-995-43
    - For checking of AFM stereo operation
      (WR5-9NS) Part code: 8-967-995-23
    - For video frequency characteristic adjustment
      (WR5-7NE) Part code: 8-967-995-13
12) Extension harness
    Between AU-53 board CN101 and SV-38 board CN005 J-6082-111-A
    Between AU-53 board CN102 and SV-38 board CN006 J-6082-112-A
    Between RG-8 board CN001 and SV-38 board CN004 J-6082-113-A
13) Multiplex transmission signal generator
14) COMMON voltage adjustment jig (J-6082-024-A)

8-1-2. Connection of Instruments

If there is no special direction, connect the measuring instruments as shown in the following figure and perform the adjustment.

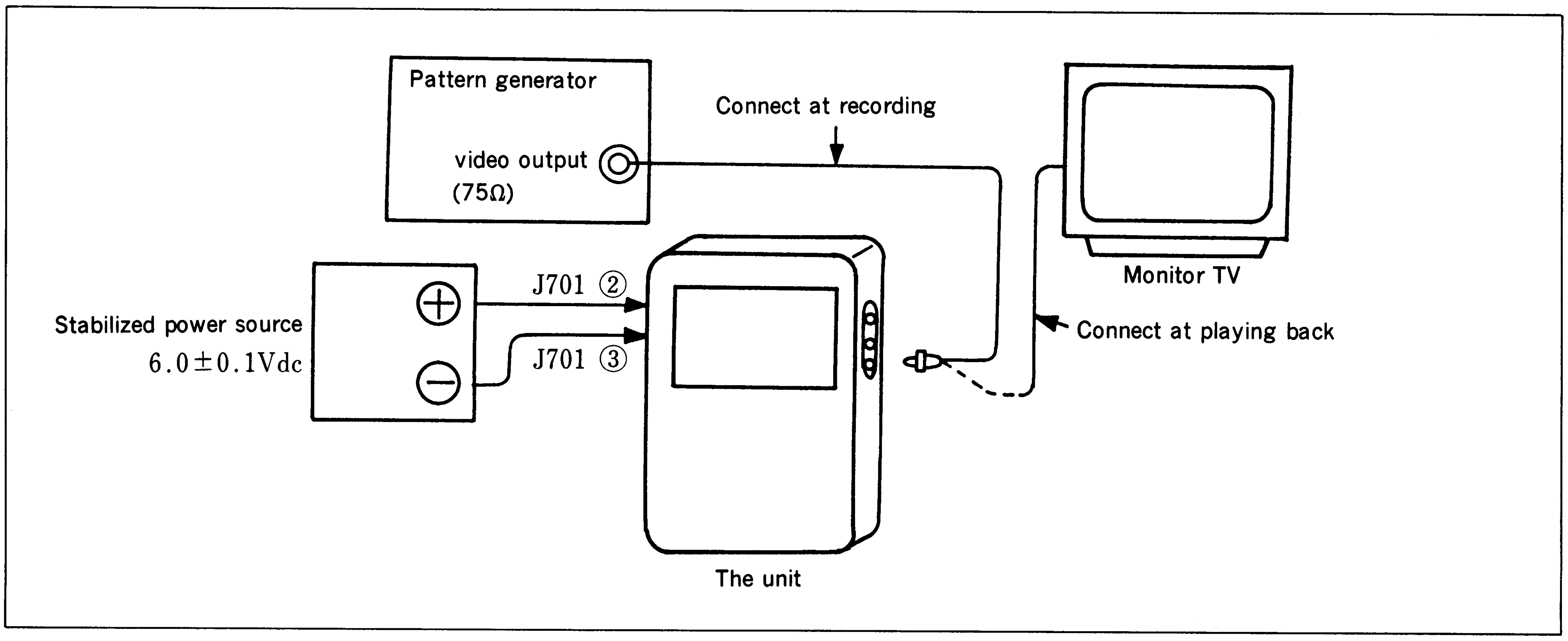


Fig. 8-1.

8-1-3. VIDEO/AUDIO Terminal of the Unit

The VIDEO/AUDIO (L/R) terminal of the unit has the function of both input and output. The operation as the input terminal or as the output terminal is automatically selected according to the operating condition of the unit.
When connecting with the other instruments, perform the connection according to the input-output of the terminal.

The operation condition of the unit and the automatic input-output election of the terminal.

Input mode selected with the INPUT SELECT button	The case that the unit is stopped or the recording mode is selected.	The case that the unit is set to the playback mode.
TUNER (television screen)	Output	Output
LINE*	Input	Output
CAMERA	Output	Output

* When the LINE is selected with the INPUT SELECT button, the display of INPUT or OUTPUT is shown according to the operation condition.

8-1-4. Set-up at the Adjustment

As the video signal obtained from the pattern generator is used as the adjustment signal for adjusting, it is required that the video output signal satisfies the specified value. Connect the pattern generator and the oscilloscope with the VIDEO input-output terminal. Check that the amplitude of the synchronous signal of the video signal is approximately 0.3V, the amplitude of the picture part is approximately 0.7V, the amplitude of the burst signal is approximately 0.3V and is flat, and the level proportion of the burst signal and the red signal is 0.30 : 0.66.

The video signal (color bar) used for the adjustment is shown in the Fig. 8-2.

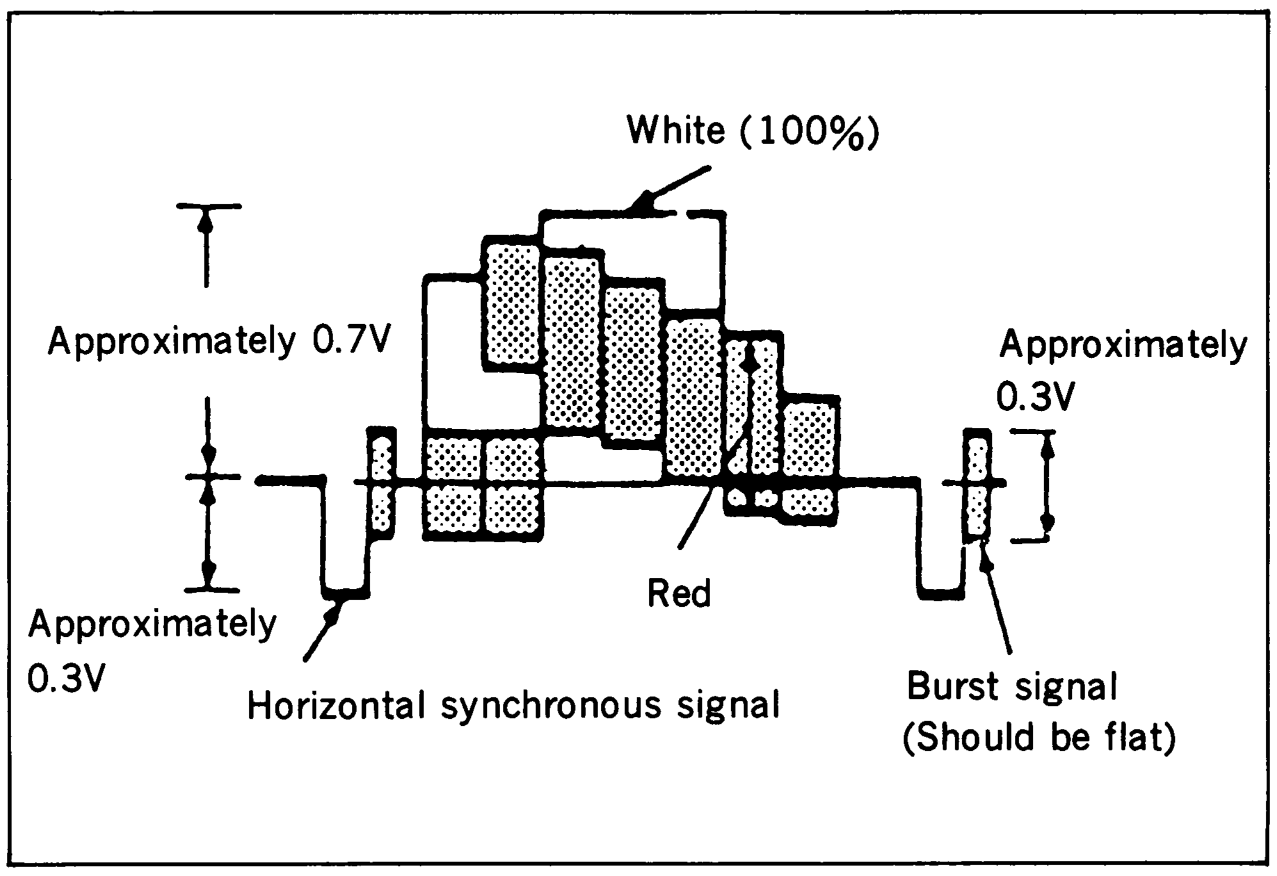


Fig. 8-2. Color bar signal of the pattern generator

8-1-5. Alignment Tape

The following tapes are prepared for the alignment tape. Use the tape designated in the signal column of each adjustment.

Name	Recording mode	Type of tape	Speed of tape	Recording contents		Usage
				Video area	PCM area	
Tracking WR5-1NP	L	MP	SP	CH2 : 1MHz Signal for tape pass adjustment Marker for switching position adjustment(CH1 : 9MHz)		Tape pass adjustment Switching position adjustment
Video frequency characteristic WR5-7NE	E	ME	SP	RF sweep 0～15MHz Marker 2, 4.5, 7, 8.5, 10MHz		Frequency characteristic adjustment
Checking operation WR5-4NSP or WR5-5NSP	L	MP	SP	● Video signal Color bar 4 minutes Monoscope 4 minutes ● Audio signal (AFM) 400Hz 60% modulation	● Audio signal (PCM) monoscope part 20Hz, 20sec. 400Hz, 20sec. 14kHz, 20sec. } Repeat four times Color bar part 1kHz 4 minutes	Checking operation
WR5-8NSE	E	ME	SP		● Audio signal (PCM) 400Hz	
WR5-4NL	L	MP	LP	● Video signal Color bar 4 minutes monoscope 4 minutes ● Audio signal (AFM) 400Hz 60% modulation		
AFM stereo checking operation WR5-9NS	L	MP	SP	● Video signal Color bar 4 minutes monoscope 4 minutes ● Audio signal (AFM) • Color bar part Lch : 400Hz L+R (1.5MHz±60kHz) Rch : 1kHz L−R (1.7MHz±30kHz) • monoscope part DEV+Bilingual (including a RF ID signal)	● Audio signal (PCM) monoscope part 20Hz, 20sec. 400Hz, 20sec. 14kHz, 20sec. } Repeat four times Color bar part 1kHz 4 minutes	AFM stereo PB matrix adjustment

Note : Recording mode
L·········Normal mode
E·········hi8(Hi band) mode

Types of tape
MP·········Application type metal tape
ME·········Steam metal tape

Table. 8-1.

The 75% color bar signal recorded in the alignment tape is shown in the Fig.8-3.

Note : Measure with the VIDEO INPUT-OUTPUT terminal (75Ω terminal) playback mode.

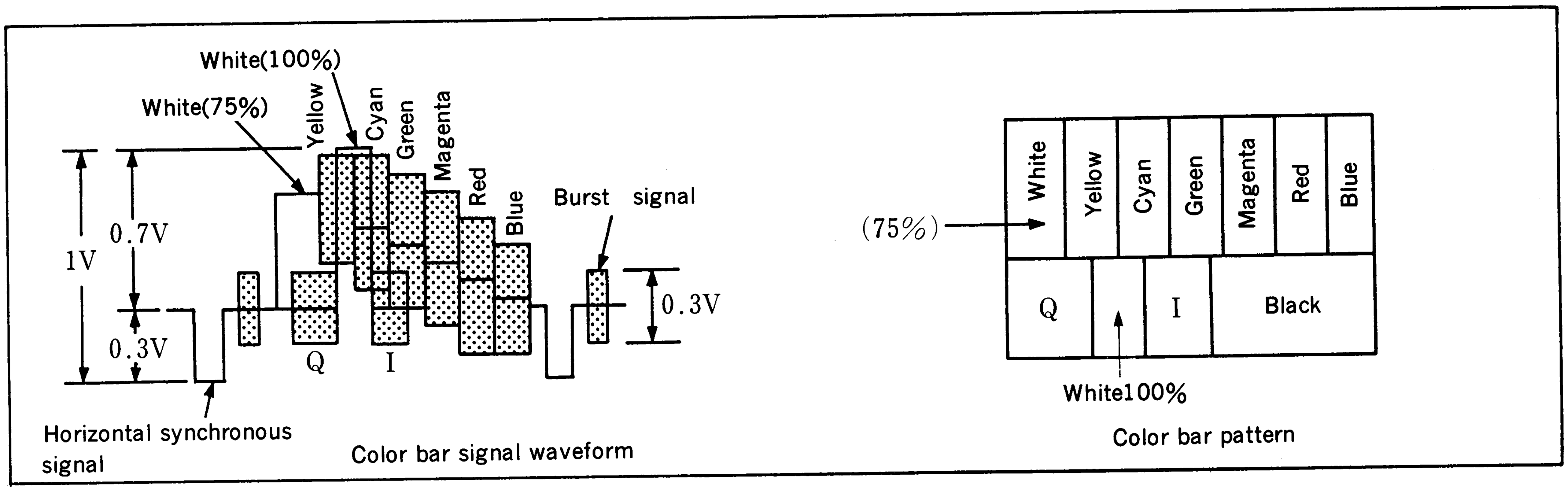

White(100%)
White(75%)
Yellow
Cyan
Green
Magenta
Red
Blue
Burst signal
1V
0.7V
0.3V
Q
I
0.3V
Horizontal synchronous signal
Color bar signal waveform
(75%)
White
Yellow
Cyan
Green
Magenta
Red
Blue
Q
I
Black
White100%
Color bar pattern

Fig.8-3. Color bar signal of the alignment tape

8-1-6. Input/Output Level and Impedance

VIDEO/AUDIO (L/R) Input-output terminal (pin jack)

VIDEO input	Input signal : 1Vp-p, 75Ω unbalance, Synchronous negative
VIDEO output	Output signal : 1Vp-p, 75Ω unbalance, Synchronous negative
AUDIO input	Input level : -7.5dBs(0dBs=0.775Vrms) Input impedance : 47kΩ or more
AUDIO output	Specified output : -7.5dBs Output impedance : 10kΩ or less

8-1-7. Test Mode

Use CN802 on the KB-10 board.

CN802 pin position

1	TEST B
2	GND
3	TEST A
4	TEST C
5	TEST D

When each terminal of the TEST A, B, C and D is shortened and opened, sixteen types of TEST MODE are selected.

When servicing, attaching the "test mode set jig" (J-6082-110-A) to CN802 allows to select sixteen types of test mode with the hexadecimal selecting switches of the jig.

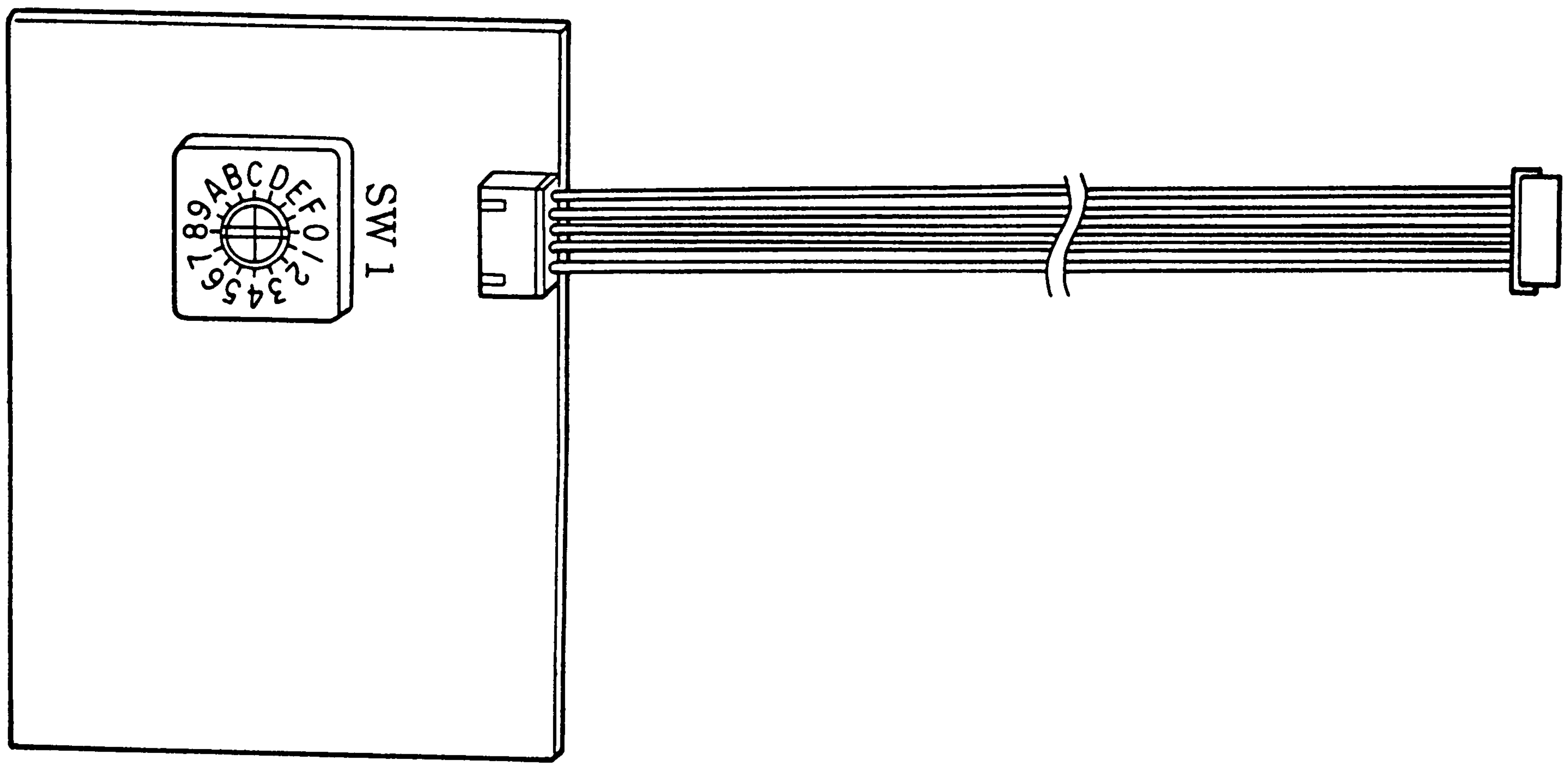


Fig8-4. Test mode set jig

TEST MODE table		Switch position of the test mode set jig.
DCBA	SELECT MODE	
0000	Normal mode	0
0001	Emergency off	1
0010	TT TEST	2
0011	Track shift	3
0100	SW POSI L	4
0101	SW POSI H	5
0110	BATT DOWN PRE	6
0111	BATT DOWN END	7
1000	VIDEO DATA, MP, SP	8
1001	VIDEO DATA, MP, LP	9
1010	VIDEO DATA, ME, SP	A
1011	VIDEO DATA, ME, LP	B
1100	VIDEO DATA, HI, MPHG, SP	C
1101	VIDEO DATA, HI, MPHG, LP	D
1110	VIDEO DATA, HI, ME, SP	E
1111	VIDEO DATA, HI, ME, LP	F

The test code is designated by four figures.

MSB LSB

"D", TEST "C", TEST "B", TEST "A"

At short : 1, At open : 0

VIDEO DATA SELECT MODE is set at the TEST, "D" MAKE.

① Normal mode

Normal set condition

② Emergency off (Release of emergency stop)

③ TT TEST

MODE for extending the SIRCS code (For producing line)

④ Track shift

Run on the ATF track shift condition at the playback mode.

Timer microcomputer is in the clock adjustment mode.

⑤ SW POSI

Adjustment mode of switch position.

SWPOSI is stored in EEPROM as 16bit DATA. This data is adjusted dividing high 8bit and low 8bit. Use CH+/− KEY.

TEST MODE0101 : Varies at 16μsec per 1STEP.

TEST MODE0100 : Varies at 1μsec per 1STEP. When low 8 bit is incremented from FF. HEX, high 8 bit goes UP. And when it is decremented from 00.HEX, high 8 bit goes DOWN.

Preset function of the SW POSI is added. The preset function sets to high 8 bit to 07. HEX, when the DATA SCREEN KEY of SC part is pressed in the SW POSI adjustment mode. The low 8 bit is not varied.

⑥ BATTTERY DOWN ADJUSTMENT

Adjusted with TEST MODE 0111. When this mode is set, the following display is shown on LCD.

PRE	−1.76
DOWN	−1.74

Supplying voltage for adjusting is performed with applying 5.50V+0.02V to the battery terminal in the TUNER REC SP MODE. When pressing the INDEX KEY on the KB-10 board, the color of display on the LCD turns to blue for few seconds from white, and then returns to white. The voltage of the battery PRE, DOWN is stored in EEPROM as the 8bit DATA by this operation.

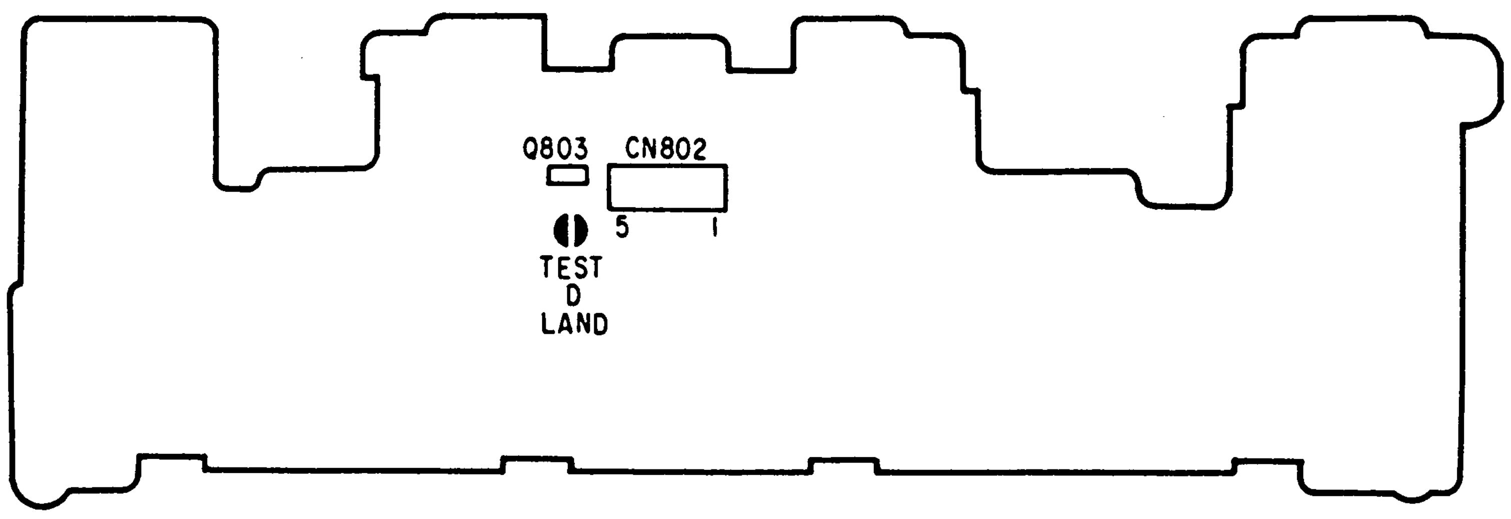
⑦ VIDEO DATA ADJUSTMENT MODE

Short the TEST D (Solder the split land at the lower part of the KB-10 board Q803)
The following display is shown on the LCD.

```
VIDEO DATA

CFL1    1    (RESET)
CFL2    1    (DISPLAY)
NCL1    1    (SLEEP)
NCL2    1    (NEXT)
NCLP1   1    (UP)
NCLP2   1    (CLOCK)
```

KB-10 BOARD (COMPONENT SIDE)



Six types of DATA are varied with the KEY on the SC part.
RESET → COUNTER RESET KEY
DISPLAY → DATA SCREEN KEY
SLEEP → SLEEP KEY
NEXT → NEXT KEY
UP → + KEY
CLOCK → CLOCK SET KEY

Pressing each KEY allows to rewrite DATA. ("0" is rewritten to "L", "1" is rewritten to "H".)
Eight modes are adjusted by the types of TAPE (ME, MP), recording (HI BAND, LO BAND) MODE, and TAPE SPEED (SP, LP).when the CH+KEY is pressed, the color of the display on the LCD turns to blue for few seconds from white and returns to white. The function to store the screen DATA in EEPROM is added by this operation. (See to the Table 8-2. for the data writing to EEPROM.)

Table 8-2. EE P ROM Write Data

TEST MODE											
D	C	B	A	Switch position of the test mode set jig		CFL1	CFL2	NCL1	NCL2	NCLP1	NCLP2
1	0	0	0	8	SP•MP	H	L	H	L	H	L
1	0	0	1	9	LP•MP	L	H	L	H	L	H
1	0	1	0	A	SP•ME	H	L	H	L	H	L
1	0	1	1	B	LP•ME	L	H	L	H	L	H
1	1	0	0	C	Hi-8 SP•MP	H	L	L	H	H	L
1	1	0	1	D	Hi-8 LP•MP	L	H	L	H	L	H
1	1	1	0	E	Hi-8 SP•ME	H	L	H	L	H	L
1	1	1	1	F	Hi-8 LP•ME	L	H	L	H	L	H

Note) When EEPROM is replaced, the following adjustment or write should be performed.

1. SW POSI adjustment
2. BATTERY DOWN adjustment
3. VIDEO DATA write
4. Channel preset

8-2. POWER SOURCE PART ADJUSTMENT

8-2-1. UNREG Power Source Voltage Check (SV-38 board)

Mode	Stop (POWER ON)
Measuring instrument	Digital voltmeter
BL UNREG check	
Measurement point	CN007 Pin ⑫
Specified value	5.9±0.2Vdc
DD UNREG check	
Meaurement point	CN007 Pin ⑪
Specified value	5.9±0.2Vdc
SS UNREG check	
Measurement point	CN007 Pin ⑥
Specified value	5.9±0.2Vdc
LD UNREG check	
Measurement point	CN07 Pin ③
Specified value	5.9±0.2Vdc
CAP UNREG check	
Measurement point	CN007 Pin ①
Specified value	5.9±0.2Vdc

[Checking method]

1) Check that the voltage of the stabilized power source is 6.0±0.1Vdc.
2) Each specified value should be satisfied.

8-2-2. Switch 5V Adjustment (SV-38 board)

Mode	Tuner receiver, record (SP mode)
Signal	Optional TV broadcast
Measurement point	CN009 Pin ⑭
Measuring instrument	Digital voltmeter
Adjustment element	RV401
Specified value	4.95±0.05Vdc

[Adjustment Method]

1) Adjust with RV401 to 4.95±0.05Vdc.

8-2-3. DD Converter Frequency Adjustment (SV-38 board)

Mode	Stop (POWER ON)
Measurement point	IC401 Pin ①
Measuring instrument	Frequency counter
Adjustment element	RV402
Specified value	479±5kHz

[Adjustment Method]

1) Adjust the oscillation frequency to 4.95±0.05Vdc with RV402.

8-2-4. −8V Adjustment (TU-123 board)

Mode	Stop (POWER ON)
Measurement point	CN001 Pin ㉒
Measuring instrument	Digital voltmeter
Adjustment element	RV501
Specified value	−8.0±0.1Vdc

[Adjustment Method]

1) Adjust with RV501 to −8.0±0.1Vdc.

8-2-5. LCD Power Source Voltage Check (RG-8 board)

Mode	Stop
Measuring instrument	Digital voltmeter
+13V check	
Measurement point	CN001 Pin ㉒
Specifed value	13.0±0.7Vdc
−20V check	
Measurement point	CN001 Pin ⑳
Specified value	−20.0±1.5Vdc

[Checking Method]

1) Each specified value should be satisfied.

8-2-6. CAM UNREG Check (CN-6 board)

Mode	Camera standby
Measurement point	CN601 Pin ①
Measuring instrument	Digital voltmeter
Specified value	5.75±0.10Vdc

[Connection]

1) Connect the CAMERA connector with the camera.
   If there is no camera, connect the resistance of 12Ω 5W between CN601 Pin ① and Pin ⑤.

[Checking Method]

1) Turn on the power, and input CAMERA with the INPUT SELECT button.
2) Check that the voltage of the stabilized power source is 6.0±0.1Vdc.
3) Check that the voltage of the CN601 Pin ① is 5.75±0.10Vdc.

8-3. SYSTEM CONTROL SYSTEM ADJUSTMENT

8-3-1. Clock Precision Adjustment (SV-38 board)

Mode	Stop (POWER ON)
Test mode *	0011 (Jig switch position 3)
Measurement point	CN003 Pin ㉔
Measuring instrument	Frequency counter
Adjustment element	CV101
Specified value	16384.0±0.2Hz

* Refer to 「8-1-7. Test mode」.

[Adjustment Method]

1) Set the test mode * 0011 (jig switch position 3).
2) Adjust with CV101 to 16384.0±0.2Hz.

8-3-2. Battery Down Adjustment

Refer to 「8-1-7. Test Mode ⑥ Battery Down Adjustment」.

8-4. SERVO SYSTEM ADJUSTMENT

8-4-1. CUE/REV Adjustment (SV-38 board)

Mode	CUE and REV
Signal	Alignment tape : for checking the SP mode operation (WR5-5NSP) : for checking the LP mode operation (WR5-4NL)
Measurement point	IC301 Pin ⑩ and Pin ⑪ and Q306 Ⓒ
Measuring instrument	Oscilloscope
Adjustment element	RV301
Specified value	WR5-5NSP at CUE/REV Q306 Ⓒ DC voltage level is "H" WR5-4NL at CUE/REV Q306 Ⓒ DC voltage level is "L"

[Adjustment Method]

1) Adjust the IC302 Pin ⑩ to 3.0±0.1Vdc with RV301.
2) Play back the WR5-5NSP and set the CUE and REV mode, check that the DC voltage level of Q306 Ⓒ is "H" (4Vdc or more). And play back the WR5-4NL and set the CUE and REV mode, check that the DC voltage level of Q306 Ⓒ is "L" (1Vdc or less).
3) When the item 2) is not satisfied, play back the WR5-5NSP and set the CUE and REV mode, measure the DC voltage of IC302 Pin ⑪. Set this value as Vsp. Play back the WR5-4NL and set the CUE and REV mode, measure the DC voltage of IC301 Pin ⑪. Set this value as VLP.

$$V=\frac{V_{SP}+V_{LP}}{2}$$

   Obtain the value of V, and adjust with RV301 so that the DC voltage of IC302 Pin ⑩ is the value of V.
4) Return to the item 2) and reconfirm.

8-4-2. Switching Position Adjustment (RP-75 board)

Mode	Playback
Test mode *	0101 (Jig switching position 5) and 0100 (Jig switching position 4)
Signal	Alignment tape : for tracking adjustment (WR5-1NP)
Measurement point	CH1 : CN503 Pin ④ (RF SW P) CH2 : CN503 Pin ③ (RF OUT)
Measuring instrument	Oscilloscope
Adjustment KEY	KB-10 board S802 (CH-) and S803 (CH+)
Specified value	t=0±5μsec

[Adjustment Method]

1) Set the test mode * 0101 (Jig switching position 5).
2) Press the DATA SCREEN button on the upper part of the LCD.
3) Press the S802(CH−) and S803(CH+) switches on the KB-10 board so that "t" is nearly 0. (rough adjustment)
4) Set the test mode * 0100 (Jig switching position 4).
5) Press S802(CH−) and S803 (CH+) switches on the KB-10 board so that t=0±5μsec. (fine adjustment)
6) Disconnect the test mode jig.

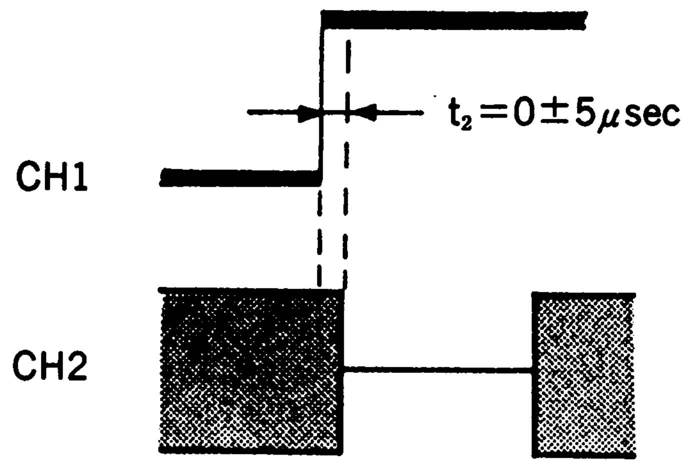


Fig. 8-6.

8-5. VIDEO SYSTEM ADJUSTMENT

Adjust the video system in the following procedures in principle. The color bar signal supplied from the pattern generator is used as the video input signal for the video system adjustment of the recording mode. Check that the synchronous signal and the color burst signal are satisfied with the specified value designated to the adjusting setup as shown in the figure 8-2.

[Adjustment Procedures]

1) Playback frequency characteristic adjustment
2) fsc check
3) SYNC AGC adjustment
4) IR adjustment
5) Y/C separation adjustment
6) Emphasis Y level adjustment
7) De-emphasis Y level adjustment
8) Playback Y level adjustment
9) Y FM carrier adjustment
10) Y FM deviation adjustment
11) Recording Y level adjustment
12) Chroma emphasis adjustment
13) Recording chroma level adjustment

8-5-1. Playback Frequency Characteristic Adjustment (RP-75 board)

Mode	Playback
Signal	Alignment tape : for frequency characteristic adjustment(WR5-7NE)
Measurement point	CH1 : CN503 Pin ④(RF SWP) CH2 : CN503 Pin ③(PB RF)
Measuring instrument	Oscilloscope
Adjustment element	PB1-CH : RV501 PB2-CH : RV502
Specified value	2.0MHz level : 8.5MHz level=50 : 23±2

[Adjustment Method]

1) Adjust with each RV so that the PB1-CH, PB2-CH and PB RF OUT satisfy the specified value.

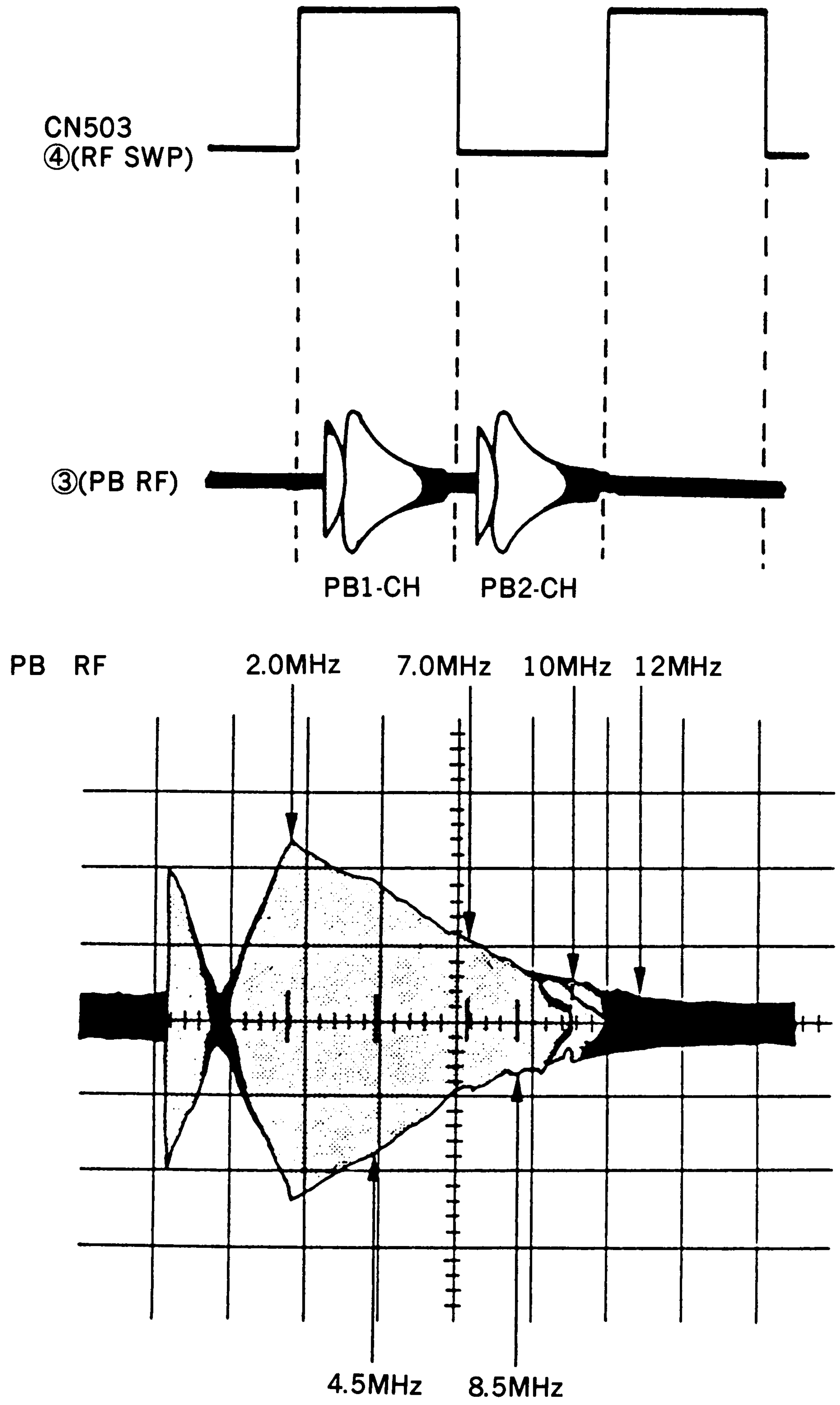


Fig. 8-7

8-5-2. fsc Check (SV-38 board)

Mode	Playback
Signal	Alignment tape : for operation check(WR5-5NSP) Color bar part
Measurement point	IC701 Pin ⑫
Measuring instrument	Oscilloscope Frequency counter
Specified value	Oscillation frequency : 3579545±150Hz Output level : 450±50mVp-p

[Checking Method]

1) Check that the oscillation frequency of the IC701 Pin ⑫ is 3579545±150Hz and the output level is 450±50mVp-p.

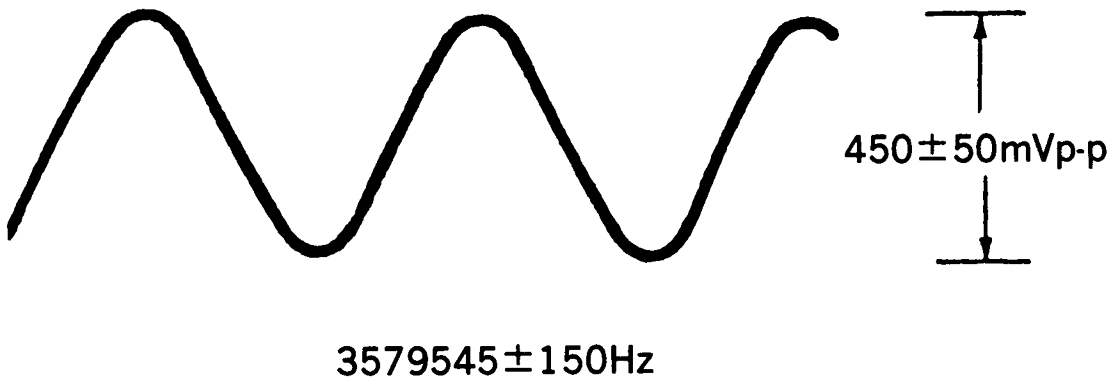


Fig.8-8.

8-5-3. SYNC AGC Adjustment (SV-38 board)

Mode	Recording
Signal	Color bar
Measurement point	IC601 Pin ㉜
Measuring instrument	Oscilloscope
Adjustment element	RV608
Specified value	0.50±0.02Vp-p

[Adjustment Method]

1) Adjust with RV608 to 0.50±0.02Vp-p.

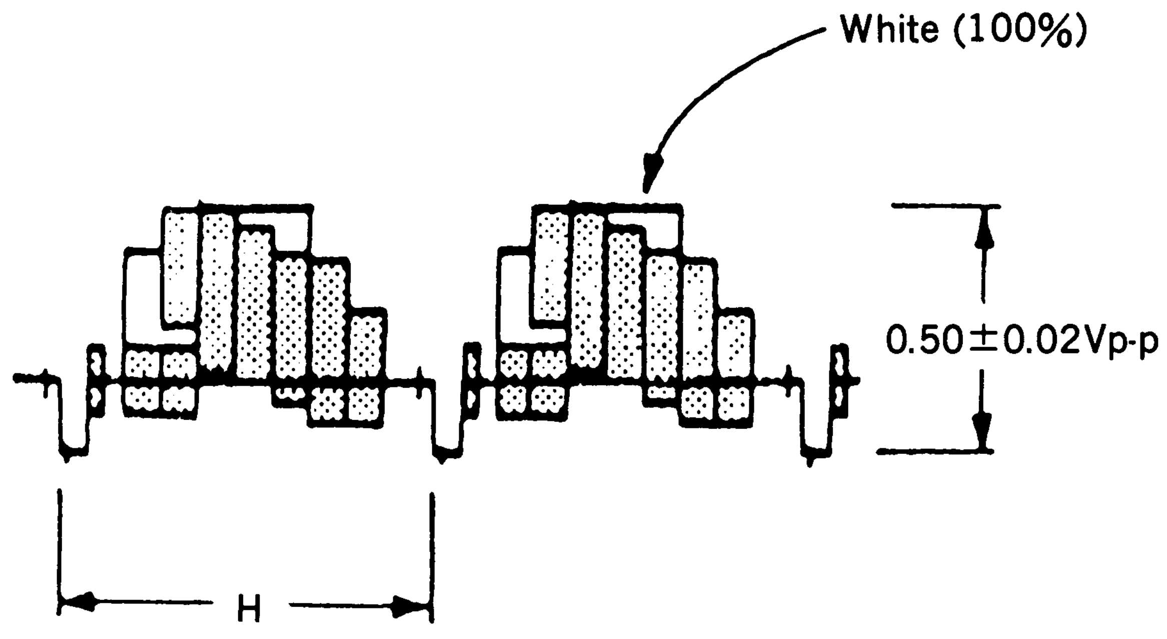


Fig. 8-9.

8-5-4. IR Adjustment (SV-38 board)

Mode	Recording
Signal	Color bar
Measurement point	IC601 Pin ⑦
Measuring instrument	Oscilloscope
Adjustment element	RV604
Specified value	Minimize the red remaining chroma element (60mVp-p or less)

[Preparation]

1) Short with the jumper wire between the Pin ⑭ and Pin (51) of IC601.

[Adjustment Method]

1) Minimize the red remaining chroma element with RV604. (60mVp-p)
2) After the adjustment, disconnect the jumper wire.

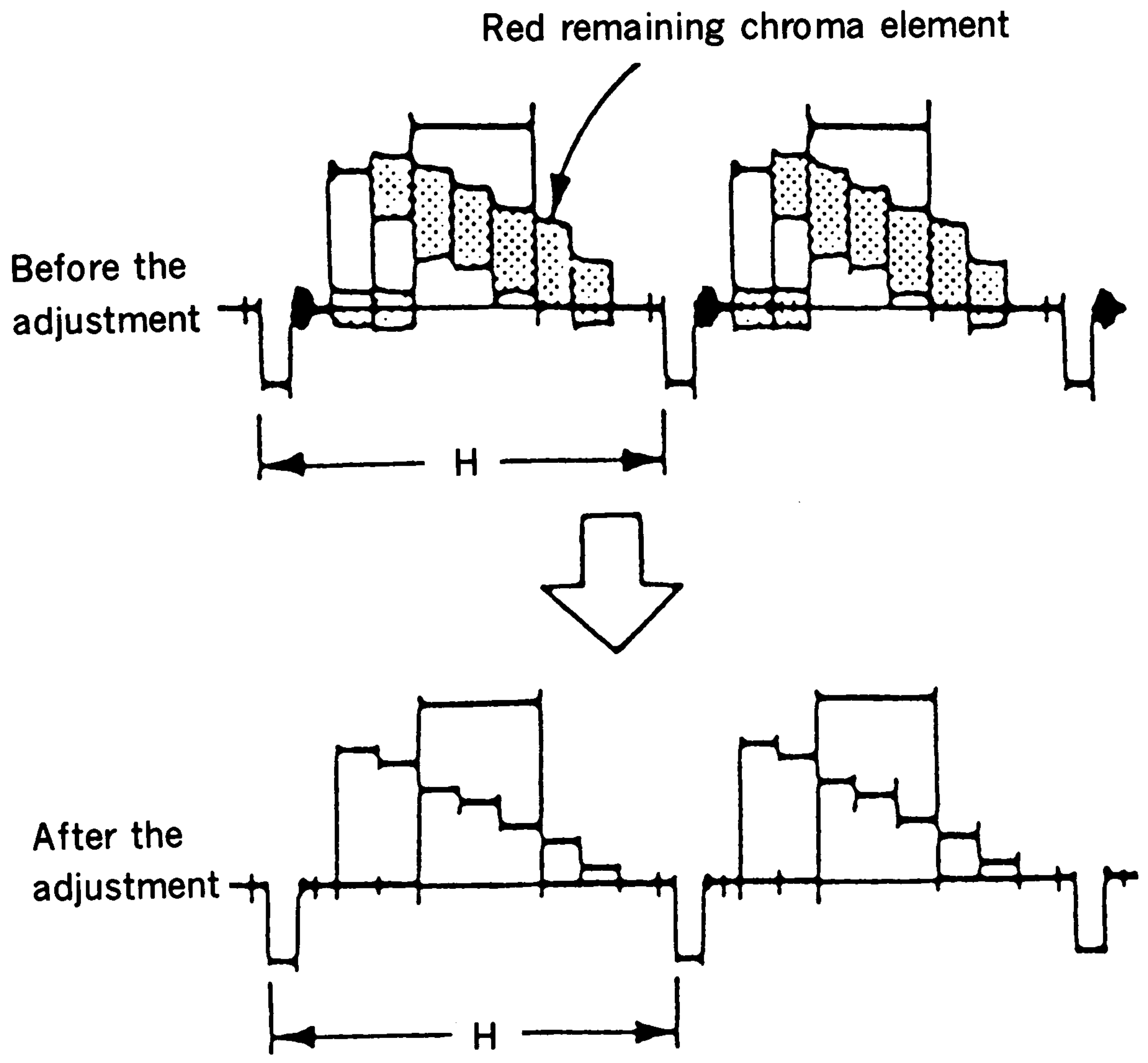

Red remaining chroma element
Before the adjustment
H
After the adjustment
H

Fig.8-10.

8-5-5. Y/C Separation Adjustment (SV-38 board)

Mode	Recording
Signal	Color bar
Measurement point	IC601 Pin ⑪
Measuring instrument	Oscilloscope
Adjustment element	RV601, RV606 (alternate adjustment)
Specified value	Minimize the red remaining chroma element (30mVp-p or less)

[Adjustment Method]

1) Adjust RV601 and RV606 alternately, and minimize the red remaining chroma element.

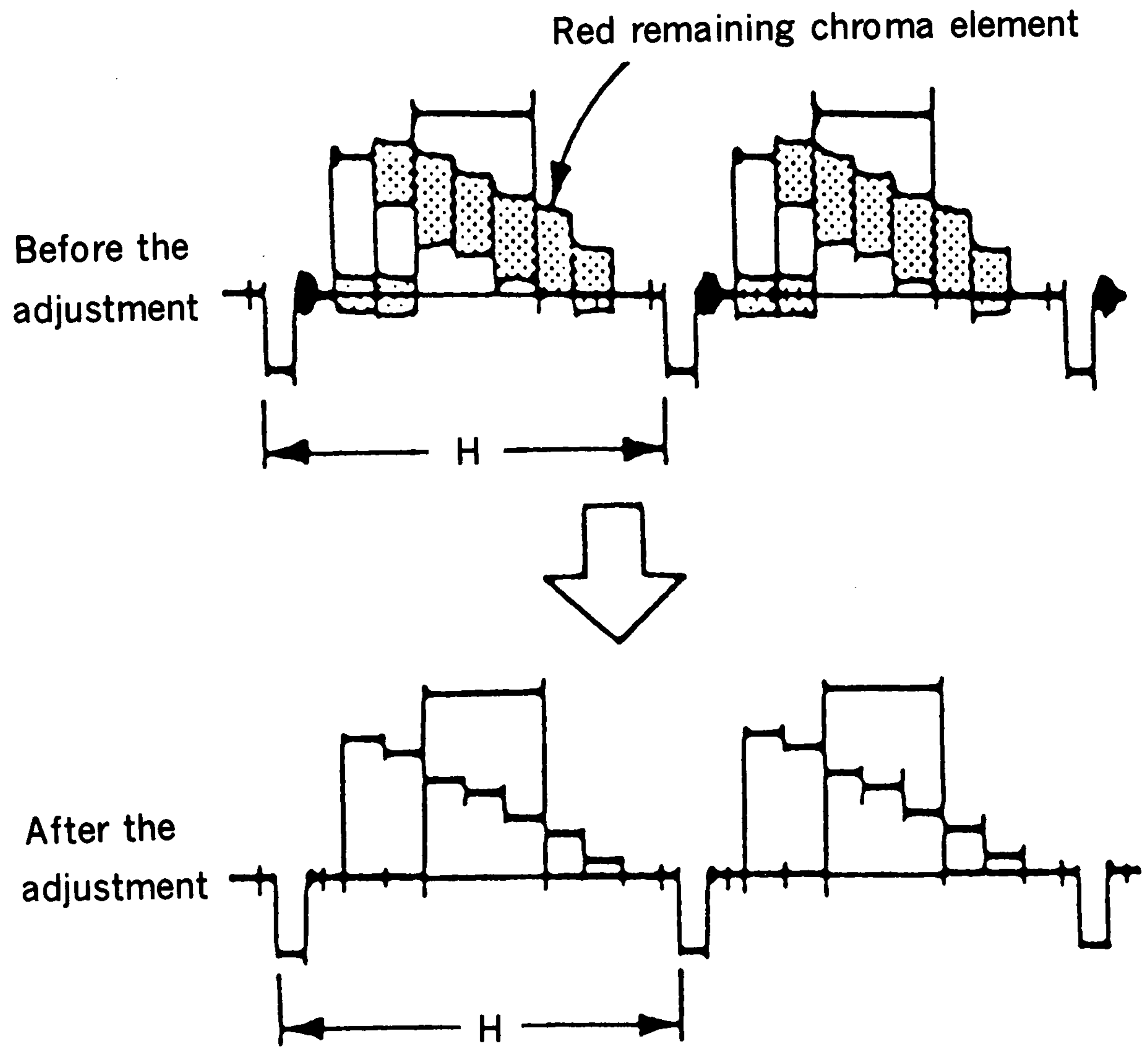

Red remaining chroma element
Before the adjustment
H
After the adjustment
H

Fig.8-11.

8-5-6. Emphasis Y Level Adjustment (SV-38 board)

Mode	Recording
Signal	Color bar
Measurement point	IC601 Pin ③
Measuring instruement	Oscilloscope
Adjustment element	RV607
Specified value	0.50±0.02Vp-p

[Adjustment Method]

1) Adjust with RV607 to 0.50±0.02Vp-p.

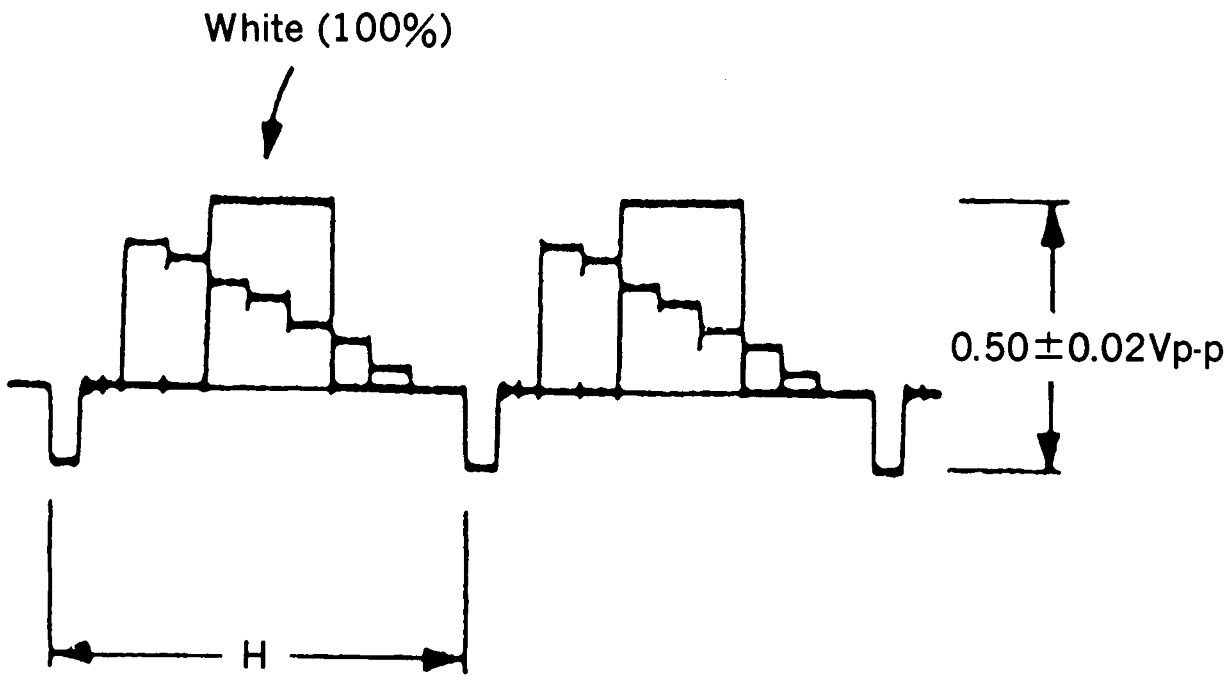


Fig.8-12.

8-5-7. De-emphasis Y Level Adjustment (SV-38 board)

Mode	Playback
Signal	Alignment tape: for operation check (WR5-5NSP)
Measurement point	IC601 Pin ㉑
Measuring instrument	Oscilloscope
Adjustment element	RV605
Specified value	0.50±0.02Vp-p

[Adjustment Method]

1) Adjust with RV605 to 0.50±0.02Vp-p.

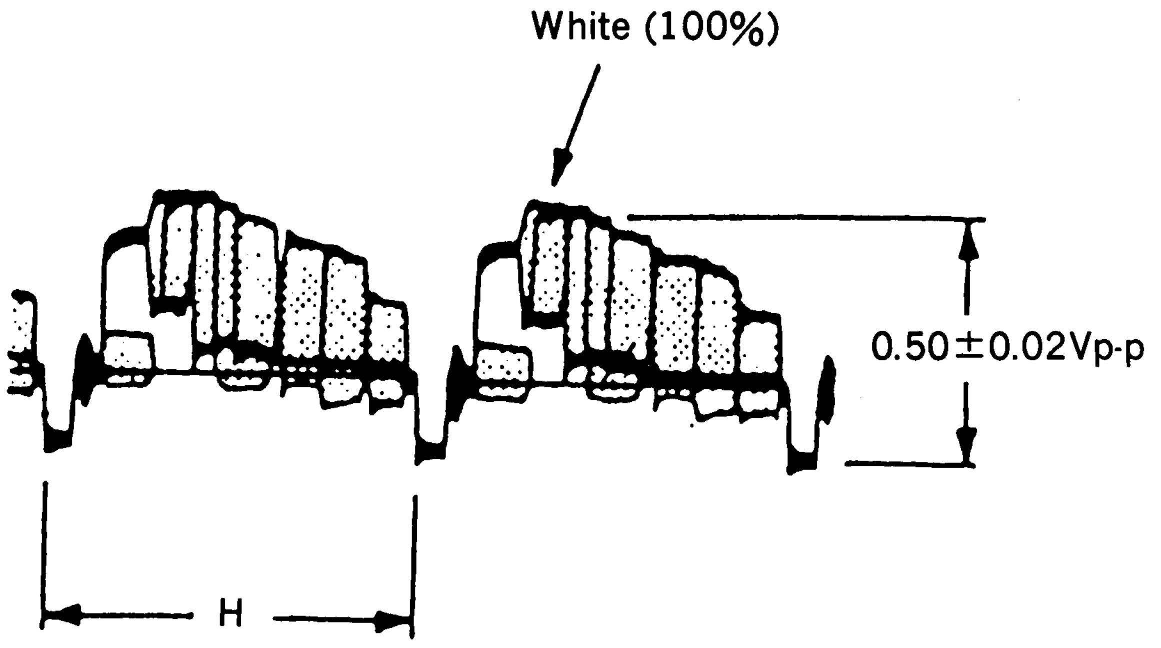


Fig.8-13.

8-5-8. Playback Y Level Adjustment (SV-38 board)

Mode	Playback
Signal	Alignment tape: for operation check (WR5-5NSP) and (WR5-8NSE) color bar part
Measurement point	CN004 Pin ④
Measuring instrument	Oscilloscope
Adjustment element	RV609
Specified value	1.00±0.05Vp-p

[Adjustment Method]

1) Play back WR5-5NSP and adjust with RV609 to 1.00±0.05Vp-p.

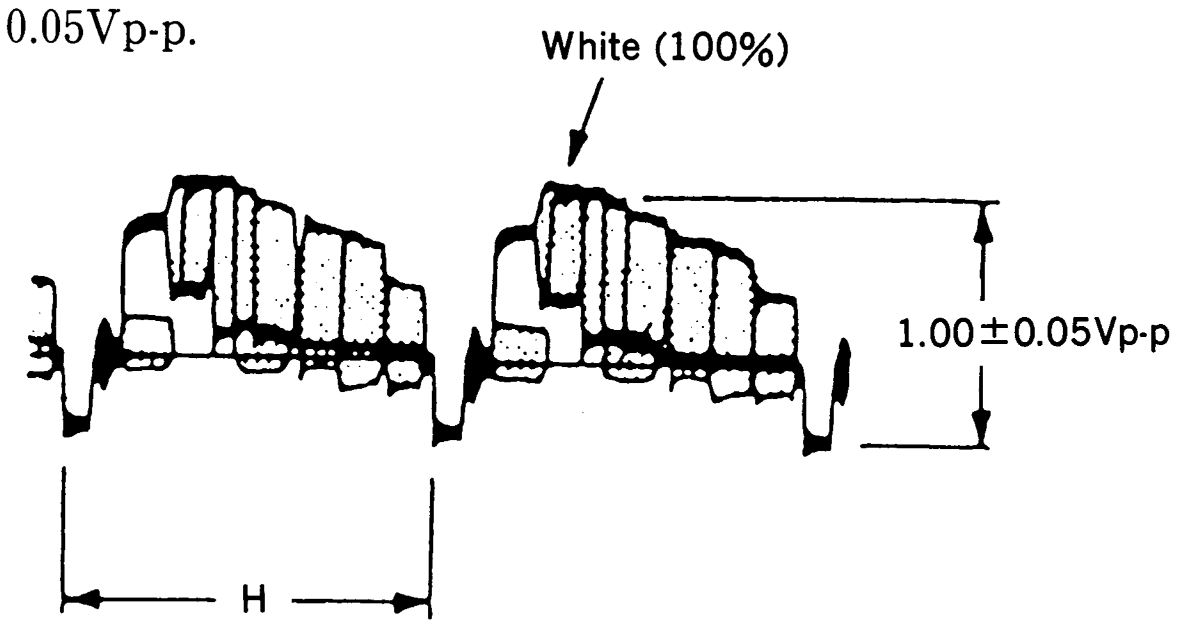


Fig.8-14.

2) Play back WR5-8NSE and check that it is 1.00±0.1Vp-p.

8-5-9. Y FM Carrier Adjustment (SV-38 board)

Mode	Recording
Signal	No signal
Measurement point	CN801 Pin ⑩
Measuring instrument	Frequency counter
Adjustment element	RV602
Specified value	4.37±0.02MHz

[Adjustment Method]

1) Adjust with RV602 to 4.37±0.02MHz.
2) After the adjustment, be sure to perform 「Y FM deviation adjustment」.

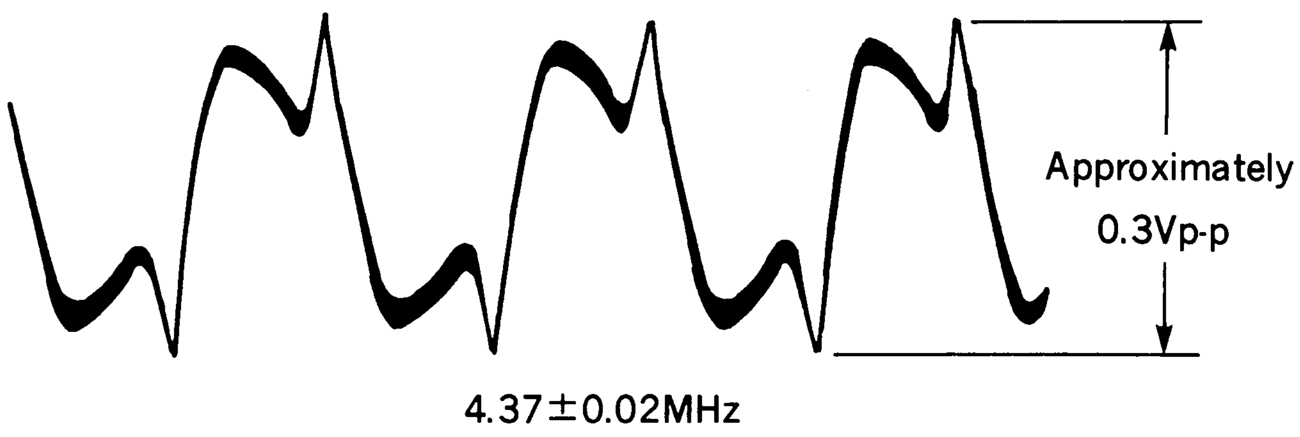


Fig.8-15.

8-5-10. Y FM Deviation Adjustment (SV-38 board)

Mode	Recording and playback
Signal	Color bar
Measurement point	VIDEO input-output terminal (75Ω terminal)
Measuring instrument	Oscilloscope
Adjustment element	RV603
Specified value	Playback level is 1.00±0.05Vp-p

Note) 「De-emphasis Y level adjustment」, 「Playback Y level adjustment」 and 「Y FM carrier adjustment」 should be completed.

[Adjustment Method]

1) Record the color bar signal.
2) Play back the recorded signal.
3) Check the playback output.
   Specified value : 1.00±0.05Vp-p
4) When the specified value is not satisfied, rotate RV603 as shown in the following table and return to the item 1), and then perform the reconfirmation.

	Rotating direction of RV603
Over the specified value	Clockwise (↻)
Under the specified value	Counterclockwise (↺)

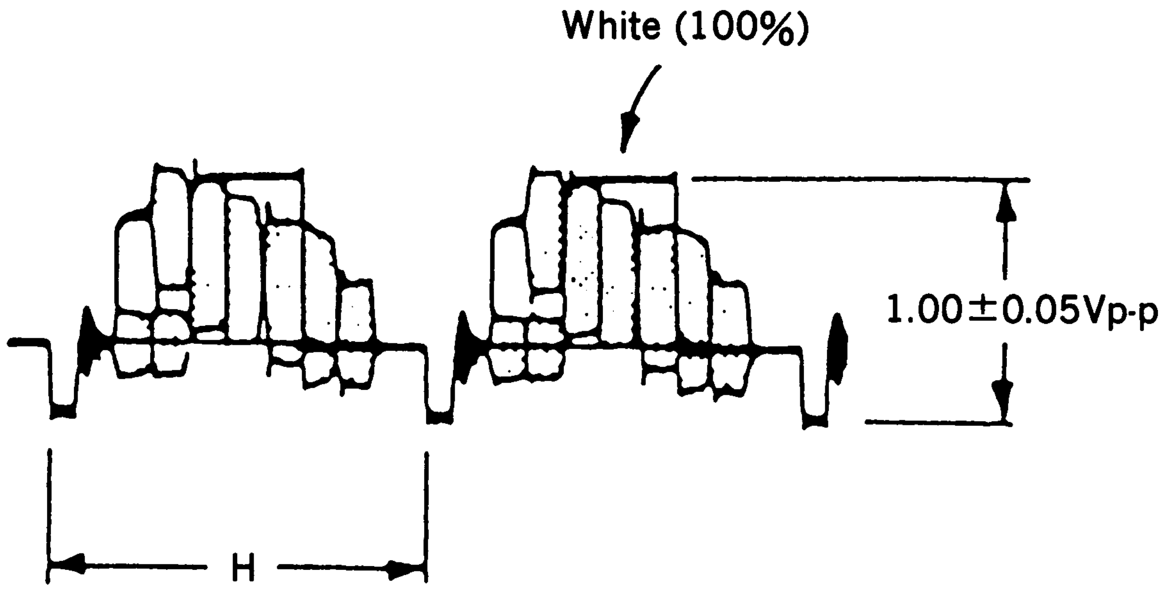


Fig.8-16

8-5-11. Recording Y Level Adjustment (SV-38 board)

Mode	Recording
Signal	No signal
Measurement point	CN801 Pin ⑩
Measuring instrument	Oscilloscope (20MHz band limit ON)
Adjustment element	RV802
Specified value	260±5mV

[Adjustment Method]

1) Adjust with RV802 to 260±5mV.

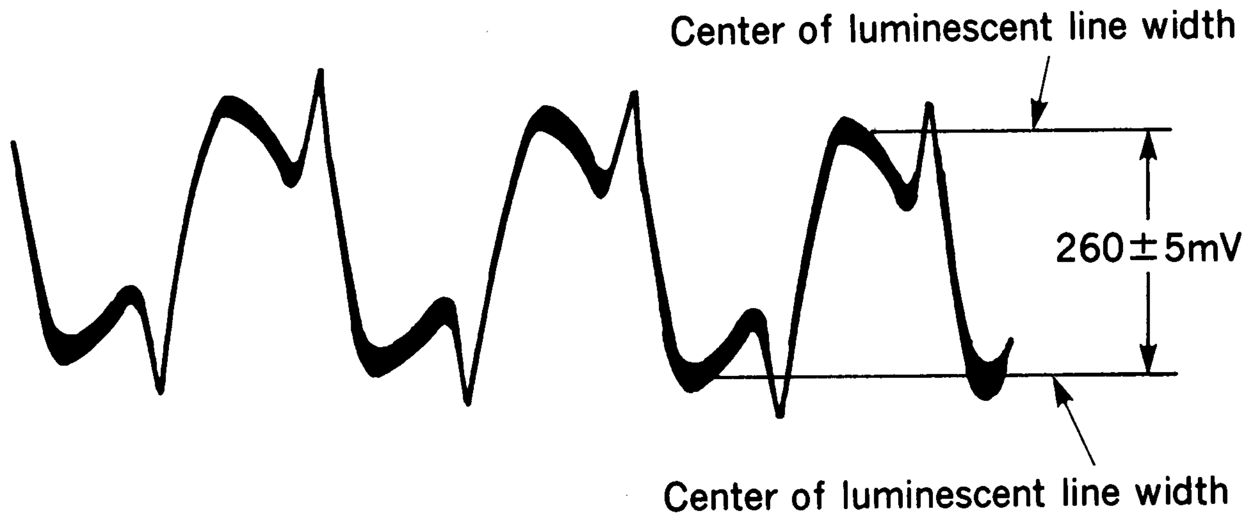

Center of luminescent line width
260±5mV
Center of luminescent line width

Fig.8-17.

8-5-12. Chroma Emphasis Adjustment (SV-38 board)

Mode	Recording
Signal	Color bar
Measurement point	IC701 Pin ㉔
Measuring instrument	Oscilloscope
Adjustment element	FL702
Specified value	Minimize the red level

[Preparation]

1) Connect the resistance of 3.3kΩ between the IC701 Pin ㉔ and GND.

[Adjustment Method]

1) Minimize the red level with FL702.
2) After the adjustment, disconnect the resistance connected in the preparation.

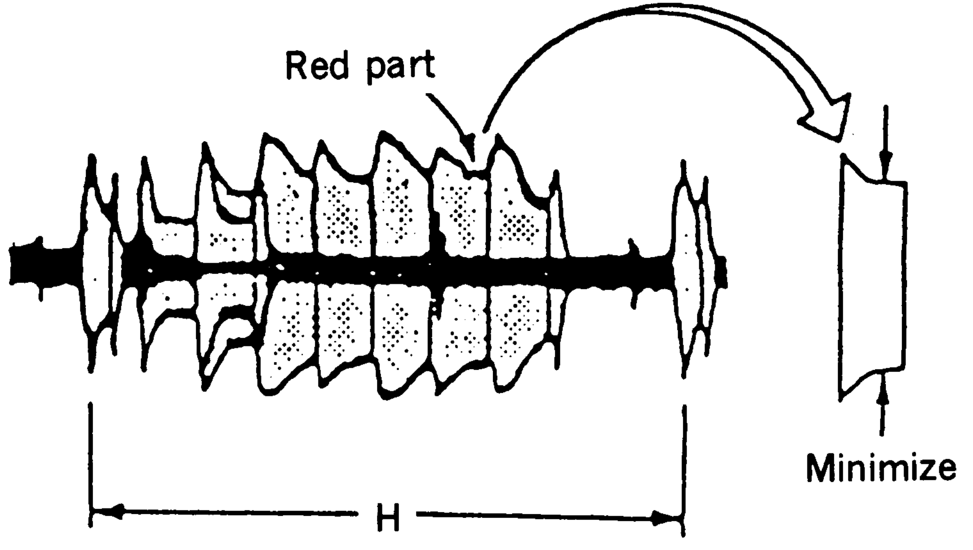


Fig.8-18.

8-5-13. Recording Chroma Level Adjustment (SV-38 board)

Mode	Recording
Signal	Color bar
Measurement point	CN801 Pin ⑪
Measuring instrument	Oscilloscope
Adjustment element	RV701
Specified value	Red level : 140±10mVp-p

[Adjustment Method]

1) Adjust the red level to 140±10mVp-p with RV701.

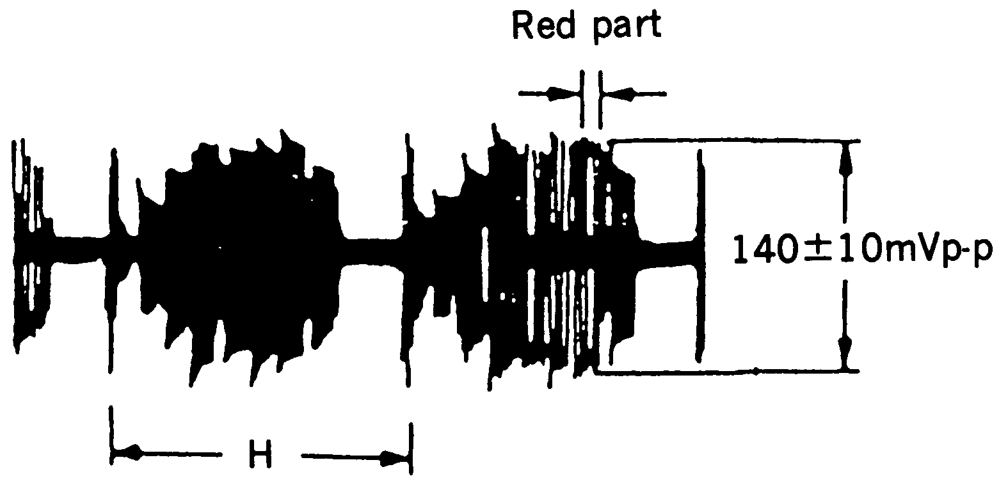


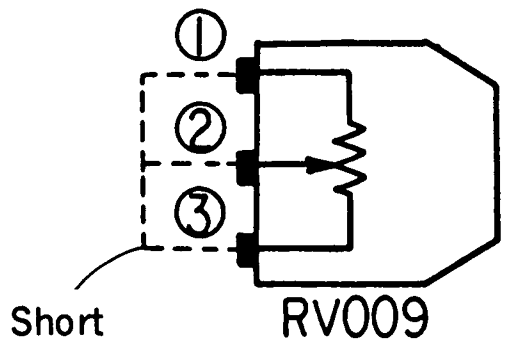
Fig.8-19.

8-6. LCD SYSTEM ADJUSTMENT

Caution : If you touch the back light holder, you may receive an electric shock. Be careful to perform the adjustment.

[Preparation]

1) The adjustment except for ｢white balance adjustment｣ and ｢V COM DC adjustment｣, the back light unit is not required. Remove it and perform the adjustment.
3) Set the VR as follows if there is no special direction.
   - BRIGHT (RV009)
     ·········Set the mechanical center position and short among pin ①,② and ③.



- COLOR (RV001)
  ·········The position where the voltage of IC001 46 of the RG-8 board is 1.5±0.1Vdc.
- HUE (RV002)
  ·········The position where the voltage of IC001 ③ of the RG-8 board is 1.79±0.05Vdc.

[Video input signal for adjustment]

Input the color bar signal, which the chroma signal and the burst signal are turned off, to the video input terminal as a video input signal for adjustment. Check with the CN001 pin ㉔ of the RG-8 board.

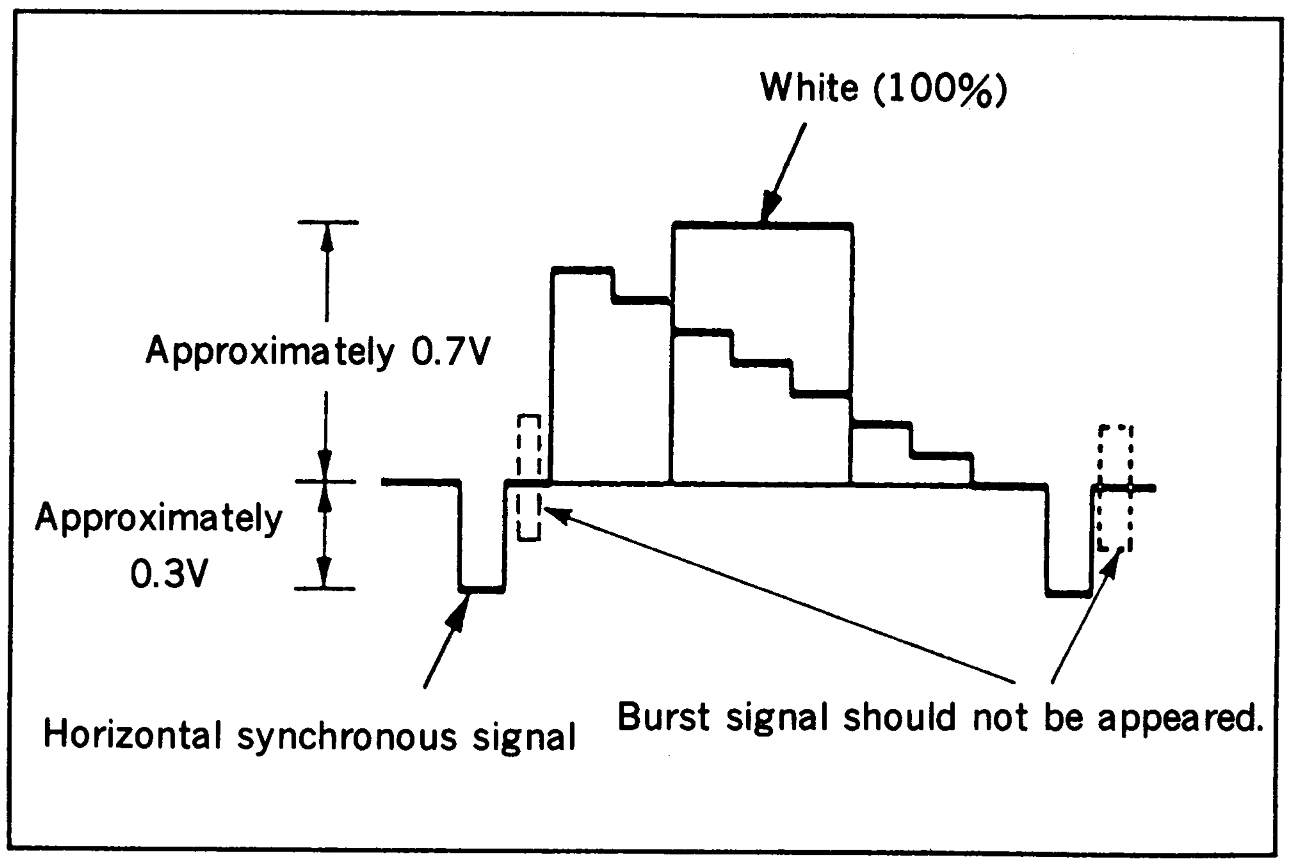

White (100%)
Approximately 0.7V
Approximately 0.3V
Horizontal synchronous signal
Burst signal should not be appeared.

Fig.8-20. Color bar signal which the chroma signal and the burst signal are turned off

8-6-1. Contrast Adjustment (RG-8 board)

Mode	POWER ON
Signal	Color bar which the chroma signal and the burst signal are turned off.
Measurement point	CN002 Pin ⑦
Measuring instrument	Oscilloscope
Adjustment element	RV005
Specified value	3.5±0.1V

[Adjustment Method]

1) Adjust with RV005 so that the voltage between white (100%) and the pedestal is 3.5±0.1V.

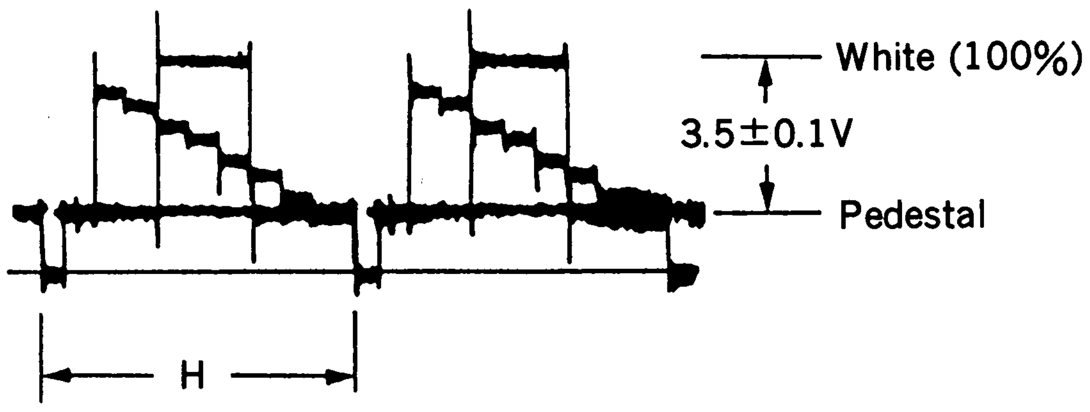


Fig.8-21.

8-6-2. R Gain Adjustment (RG-8 board)

Mode	POWER ON
Signal	Color bar which the chroma signal and the burst signal are turned off
Measurement point	CN002 Pin ⑪
Measuring instrument	Oscilloscope
Adjustment element	RV006
Specified value	3.5±0.1V

[Adjustment Method]

1) Adjust with RV006 so that the voltage between white (100%) and the pedestal is 3.5±0.1V.

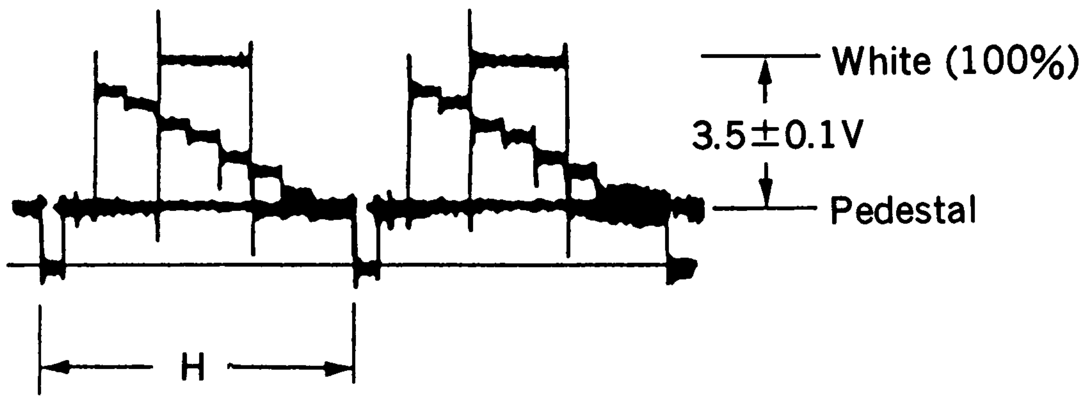


Fig. 8-22.

8-6-3. B Gain Adjustment (RG-8 board)

Mode	POWER ON
Signal	Color bar which the chroma signal and the burst signal are tured off
Measurement point	CN002 Pin ⑪
Measuring instrument	Oscilloscope
Adjustment element	RV003
Specified value	3.1±0.1V

[Adjustment Method]

1) Adjust with RV006 so that the voltage between white (100%) and the pedestal is 3.1±0.1V.

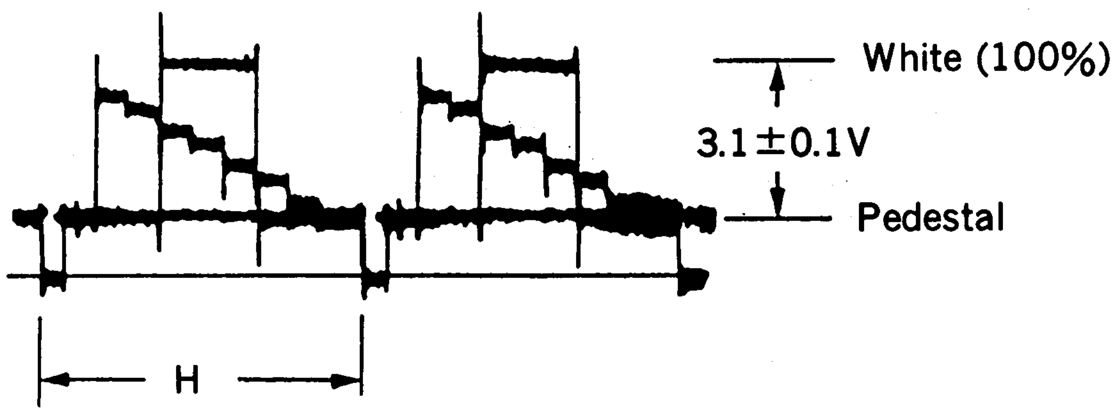


Fig. 8-23.

8-6-4. Sub Bright Adjustment (RG-8 board)

Mode	POWER ON
Signal	Color bar which the chroma signal and the burst signal are turned off
Measurement point	CN002 Pin ⑨
Measuring instrument	Oscilloscope (DC range)
Adjustment element	RV010
Specified value	−3.7±0.1V

[Connection]

1) Install the LCD unit and perform the adjustment.

[Adjustment Method]

1) Adjust with RV010 so that the DC level of the pedestal part of the positive polarity G signal is −3.7±0.1Vdc.

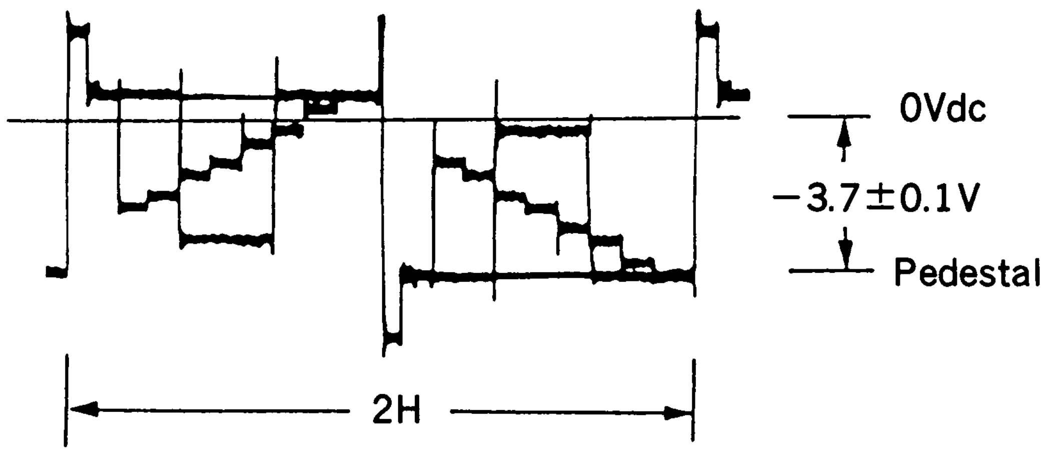


Fig.8-24.

8-6-5. fsc Adjustment (RG-8 board)

Mode	POWER ON
Signal	Video signal which the chroma signal, the burst signal and the Y signal are turned off.(Video signal with only synchronous signal)
Measurement point	IC001 Pin ②
Measuring instrument	Frequency counter
Adjustment element	CV001
Specified value	3549545±300Hz

Note : Connect the frequency counter through the buffer amplifier (oscilloscope, etc) with high impedance (1MΩ or more) and low capacity.

[Adjustment Method]

1) Adjust with CV001 so that the fsc frequency is 3579545± 300Hz.

8-6-6. White Balance Adjustment (RG-8 board)

Mode	POWER ON
Signal	Color bar which the chroma signal and the burst signal are turned off.
Measurement point	Check on the LCD screen
Measuring instrument	
Adjustment element	RV003 (B gain) RV006 (R gain)
Specified value	Screen should not be colored.

[Connection]

1) Perform the adjustment connecting the LCD unit and the back light.

[Adjustment Method]

1) Check that the LCD screen is not colored. If the screen is colored, adjust with RV003 (B gain) and RV006 (R gain).

8-6-7. V COM DC Adjustment (RG-8 board)

Mode	POWER ON
Signal	Color bar which the chroma signal and the burst signal are turned off
Measurement point	LCD screen
Measuring instrument	Oscilloscope
Adjustment element	V COM DC VR on the LCD unit
Specified value	The amplitude of the flicker waveform is the minimum.

Note : Perform the 「V COM DC adjustment」 with assembling the LCD block.
Take care that the external light should not enter into the light receiving part of the COMMON voltage adjustment jig.

[Adjustment Method]

1) Expose the light receiving part of the COMMON voltage adjustment jig to the LCD screen. (Point down the LCD screen not to receive the external light.)
2) Connect the oscilloscope with the COMMON voltage adjustment jig.
3) Turn V COM DC VR and check that the flicker waveform as shown in the fig.8-26 is output.
(When the flicker waveform is not output, check the exposing method of the light receiving part and the external light condition, and check with turning the BRIGHT control.)
4) Minimize the flicker waveform amplitude with V COM DC VR.

Note : Turn V COM DC VR slowly because it takes long time to respond to LCD.
The minimum point of the flicker waveform amplitude is nearly coincided with the maximum point of the contrast.

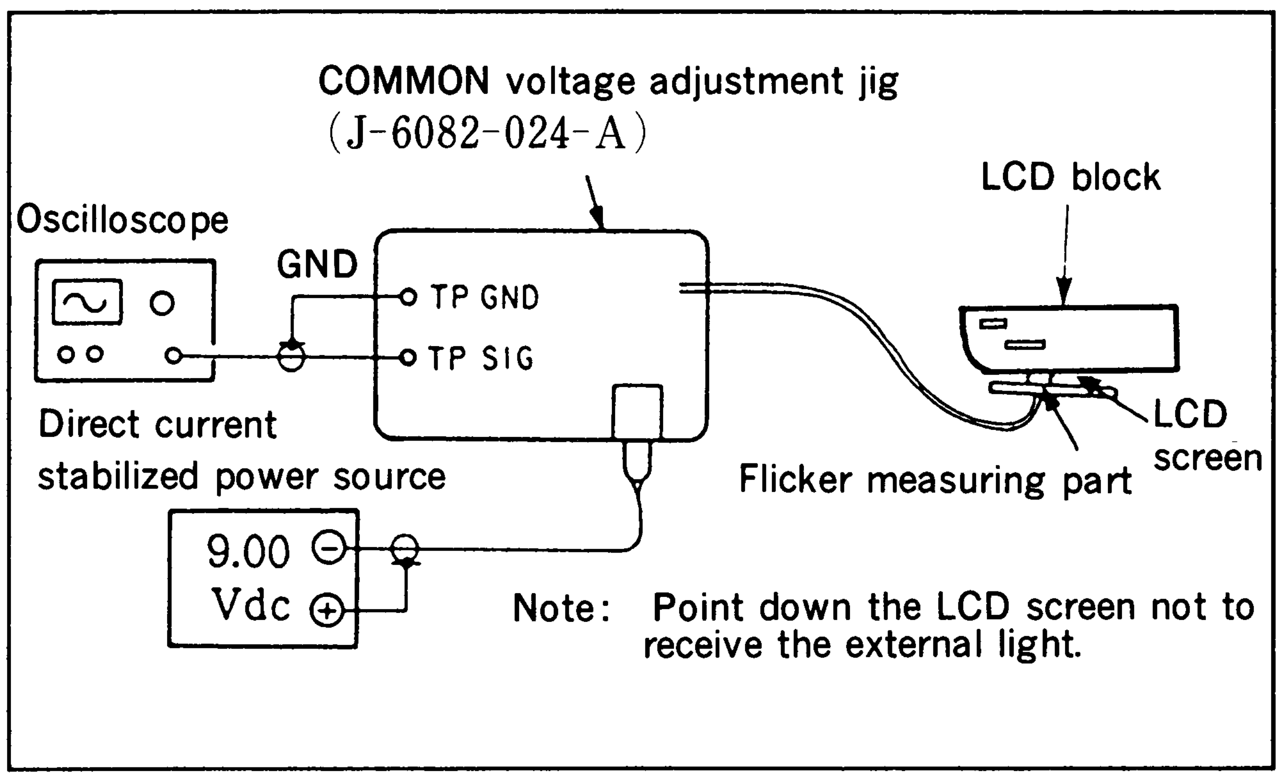

COMMON voltage adjustment jig
(J-6082-024-A)
LCD block
Oscilloscope
GND
TP GND
TP SIG
Direct current
stabilized power source
9.00
Vdc
Flicker measuring part
LCD screen
Note: Point down the LCD screen not to receive the external light.

Fig.8-25

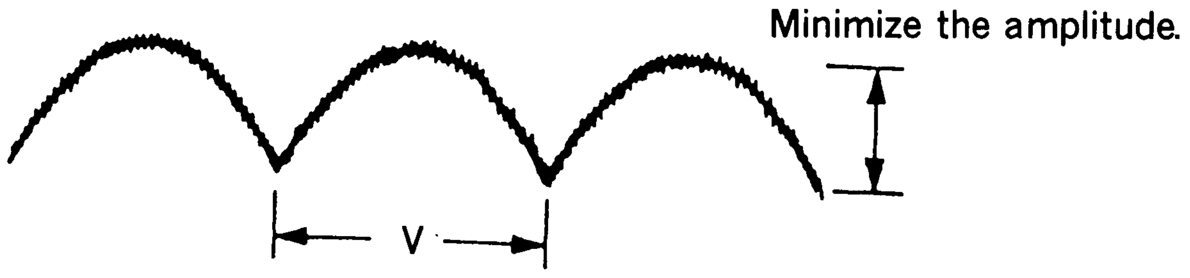

Minimize the amplitude.
V

Fig.8-26.

8-6-8. Character Position Adjustment (RG-8 board)

Mode	POWER ON
Signal	Color bar
Measurement point	LCD screen
Measuring instrument	
Adjustment element	CV801
Specified value	A=B

[Adjustment Method]

1) Press the CLOCK SET button of the LCD block and check that black frame and "AM0 : 00" display on the LCD screen.
2) Make black frame on the right end of the LCD screen with CV801 and adjust so that it dissapears.
3) Press twice the NEXT button of the LCD block and turn off the black frame on the LCD screen. (It takes approximately five seconds to turn off the frame.)

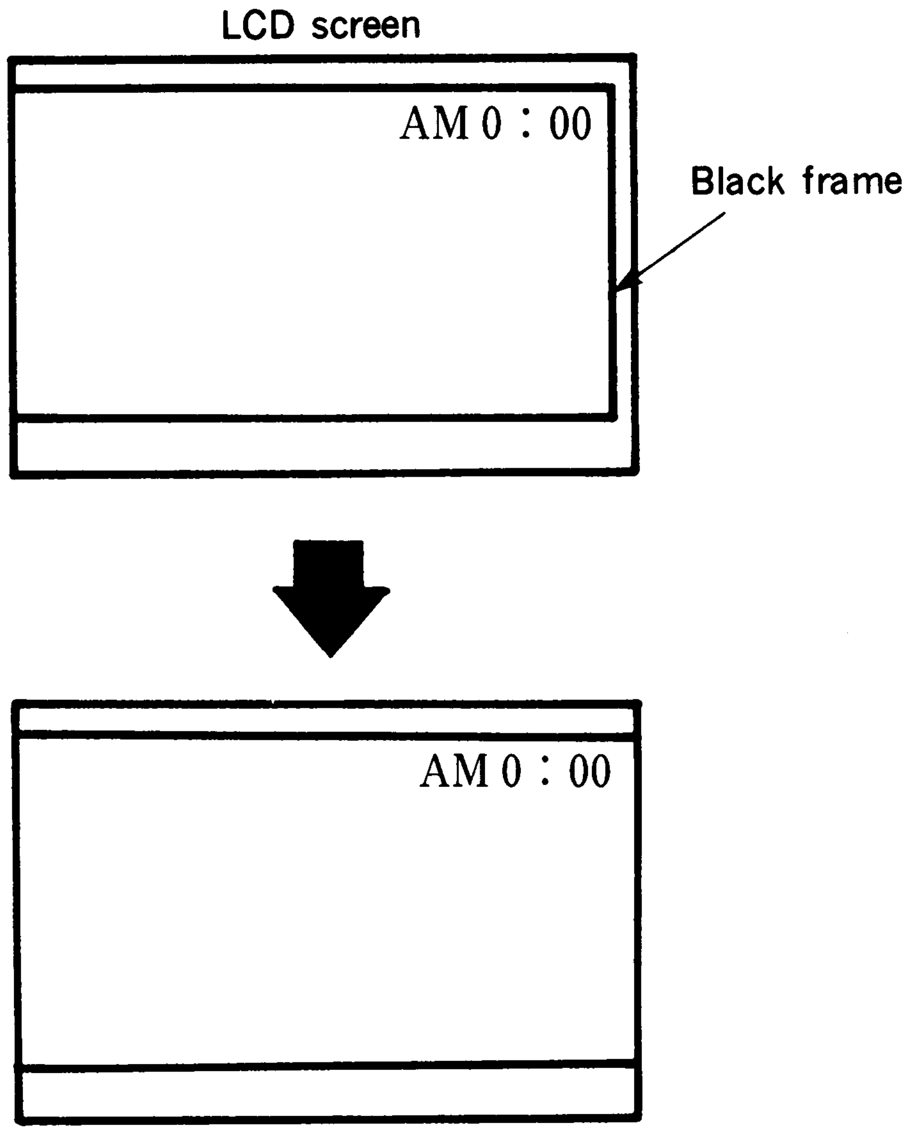


Fig.8-27.

8-7. MARKER SYSTEM ADJUSTMENT

8-7-1. Playback VCO Free Oscillation Frequency Adjustment (SV-38 board)

Mode	Playback
Signal	Optional tape
Measurement point	CL921 (Open side of R928)
Measuring instrument	Frequency counter
Adjustment element	RV923
Specified value	11.58±0.05MHz

Note : Connect the frequency counter through the high impedance and low capacity buffer amplifier (oscilloscope, etc).

[Connection]

1) Short with the jumper wire between the IC922 Pin ① and Pin ⑯ (SW5V).
2) Short with the jumper wire between Q922 Ⓑ and GND.

[Adjustment Method]

1) Adjust with RV923 to 11.58±0.05MHz.
2) After the adjustment, disconnect the jumper wire connected in the preparation.

8-8. TUNER SYSTEM ADJUSTMENT (TU-123 BOARD)

[Notes]

1) The IFT for adjustment (T001 to 004) is such an adjusted coil and is almost properly set that it is not required to turn so much. For adjustment, use an adjustment screwdriver with 0.8mm width (pink TORAY, etc.). Be careful to adjust because it is easy to break.
2) For VR for adjustment(RV001, 003 to 007, 501), use an adjustment screwdriver with 2mm width (yellow TORAY, etc).
3) When adjusting, basically follow the following adjustment procedures.
   When the replacing parts are designated, however, omit some adjustment procedures if they are required.

[Adjustment Procedures]

Note) When performing the adjustment in 1) to 4), remove the cutland soldering between the TU001 IF terminal and R006, and input the designated sisnal through the R006 side.

1) FAS adjustment (When replacing T001, C019, 020)
2) P.REF adjustment (When replacing IC001)
3) AFT adjustment (When replacing IC001)
4) S.REF adjustment (When replacing IC001)

Note) After the adjustment of 1) to 4), reinstall the cutland soldering.

5) MPX LEVEL adjustment (When replacing IC002, CF002)
6) FILTER adjustment (When replacing IC003)
7) VCO adjustment
8) Separation adjustment
9) RF AGC adjustment

8-8-1. FAS Adjustment (TU-123 board)

Adjust when replacing T001, C019, 020.

Signal input	Remove the cutland soldering of the IF terminal, and input from the R006 side of the cutland.
Signal	47.25MHz, −20dBm carrier signal
Measurement point	Q001 collector
Measuring instrument	Oscilloscope
Adjustment element	T001
Specified value	The minimum of the output level

[Adjustment Method]

1) Adjust with T001 so that the output level is the minimum.

8-8-2. P.REF Adjustment (TU-123 board)

Adjust when replacing IC001.

Signal input	Remove the cutland soldering of the IF terminal, and input from the R006 side
Signal	45.75MHz, −20dBm Carrier signal
Measurement point	IC001 Pin ①
Measuring instrument	Oscilloscope (DC range)
Adjustment element	T002
Specified value	The minimum of the DC level

[Adjustment Method]

1) Adjustment with T002 so that the DC level is the minimum.

8-8-3. AFT Adjustment (TU-123 board)

Adjust when replacing IC001.

Signal input	Remove the cutland soldering of the IF terminal, and input from the R006 side
Signal	45.75MHz, −20dBm Carrier signal
Measurement point	IC001 Pin ⑭
Measuring instrument	Oscilloscope (DC range)
Adjustment element	T003
Specified value	2.3±0.1Vdc

[Adjustment Method]

1) Adjust with T003 to be 2.3±0.1Vdc.

8-8-4. S.REF Adjustment (TU-123 board)

Adjust when replacing IC002.

Signal input	Remove the cutland soldering of the IF terminal, and input from the R006 side
Signal	45.75MHz, −20dBm Carrier signal
Measurement point	IC002 Pin ①
Measuring instrument	Oscilloscope (DC range)
Adjustment element	T004
Specified value	The minimum of the DC level

[Adjustment Method]

1) Adjust with T004 so that the DC level is the minimum.

8-8-5. MPX LEVEL Adjustment (TU-123 board)

Adjust when replacing IC002 and CF 002.

Signal	400Hz, 100%MOD (±25kHz dev.) See Fig. 8-28
Measurement point	IC003 Pin ㊳
Measuring instrument	Oscilloscope
Adjustment element	RV003
Specified value	0.70±0.03Vp-p

[Connection]

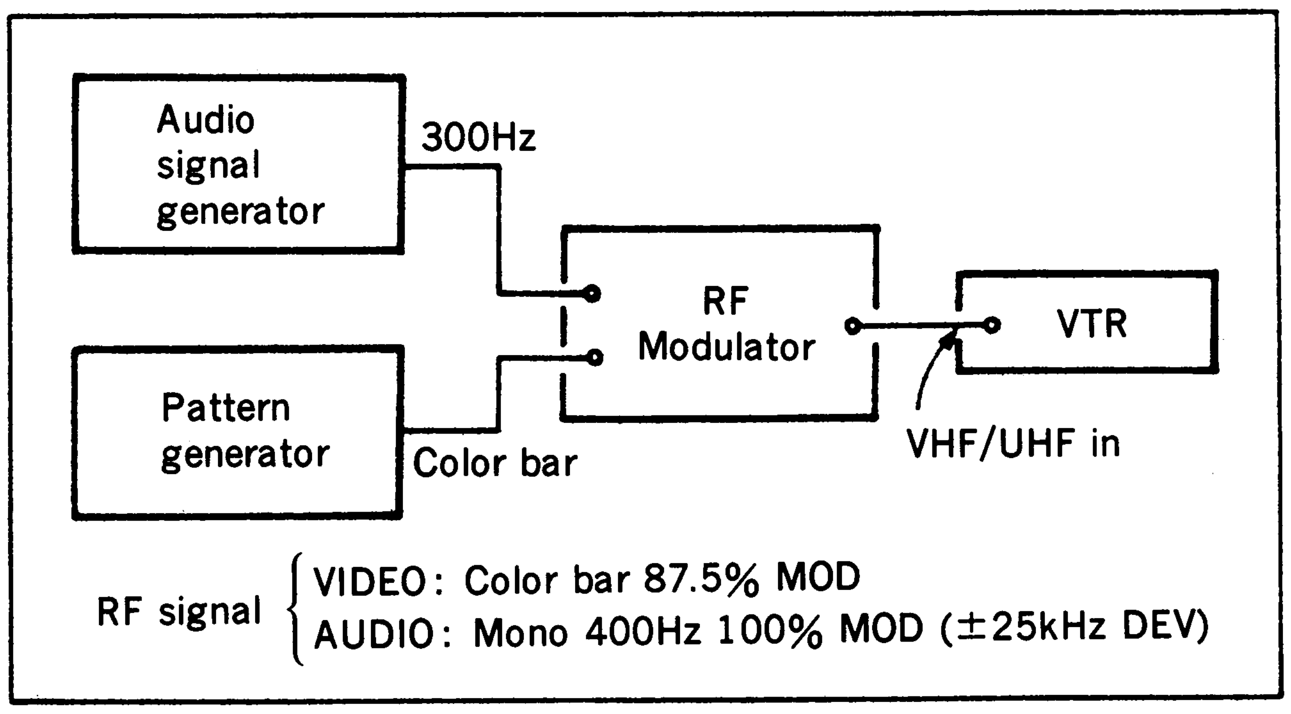


Fig. 8-28.

[Adjustment Method]

1) Adjust with RV003 to 0.70±0.03Vp-p.

8-8-6. FILTER Adjustment (TU-123 board)

Adjust when replacing IC003.

Signal input	Short the negative side of C073 with GND, and input signal to IC003 Pin ㊳ through the capacitor of 1μF.
Signal	23.6kHz, 0dBm Carrier signal
Measurement point	IC003 Pin ㉞
Measuring instrument	Oscilloscope
Adjustment element	RV007
Specified value	The minimum of the amplitude

[Adjustment Method]

1) Adjust with RV007 so that the amplitude is the minimum.

8-8-7. VCO Adjustment (TU-123 board)

Signal input	Short the negative side of C073 with GND, and input signal to IC003 Pin ㊳ through the capacitor of 1μF.
Signal	No signal and 15.734kHz, 0dBm Carrier signal
Measurement point	IC003 Pin ㊴
Measuring instrument	Oscilloscope (DC range)
Adjustment element	RV006
Specified value	The DC level at no-signal, at 15.734kHz and at input of the 0dBm carrier signal is the same.

[Adjustment Method]

1) Adjust with RV006 so that the DC level at no-signal, at 15,734kHz, and at input of the 0dBm carrier signal is the same.

Note) Too much turning RV006 will cause that the DC level is not allowed to change. The point to adjust is where the DC level changes and the DC level is the same position as that of no-signal.

8-8-8. Separation Adjustment (TU-123 board)

Signal	● MPX signal : See table ● Connection : See Fig. 8-29
Measurement point	CN001 Pin ⑬(Rch out) CN001 Pin ⑮ (Lch out)
Measuring instrument	Oscilloscope
Adjustment element	RV004, RV005
Specified value	The minimum of the Crosstalk

[Signal]

Signal	Modulation
Stereo Pilot Signal	ON
Main Channel Signal	Lch : 400Hz, 30% Rch : 2kHz, 30%
Sub Channel Signal	NOISE REDUCTION : ON PRE EMPHASIS : ON

[Connection]

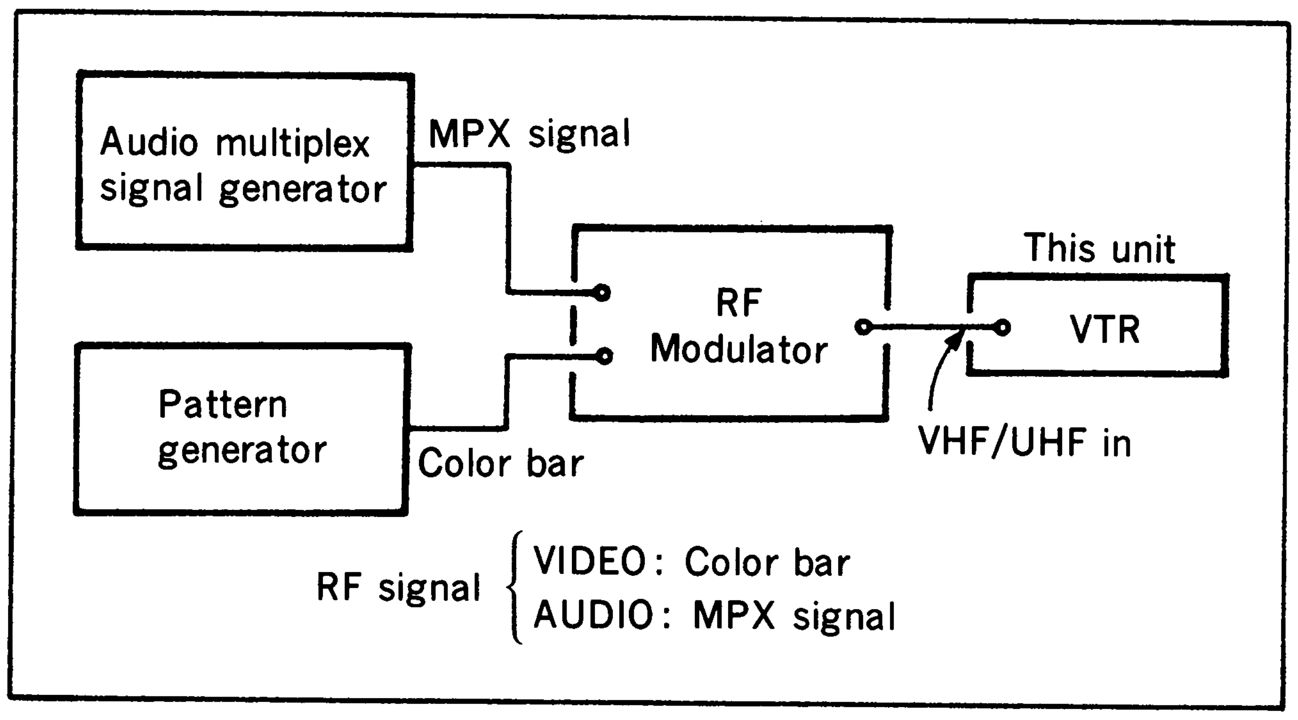

Audio multiplex signal generator
MPX signal
Pattern generator
Color bar
RF Modulator
This unit
VTR
VHF/UHF in
RF signal
VIDEO: Color bar
AUDIO: MPX signal

Fig.8-29

[Adjustment Method]

1) Adjust with RV004 and 005 so that the crosstalk is the minimum.

8-8-9. RF AGC Adjustment (TU-123 board)

Mode	E-E
Signal	Broadcast TV signal
Adjustment element	RV001

[Adjustment Method]

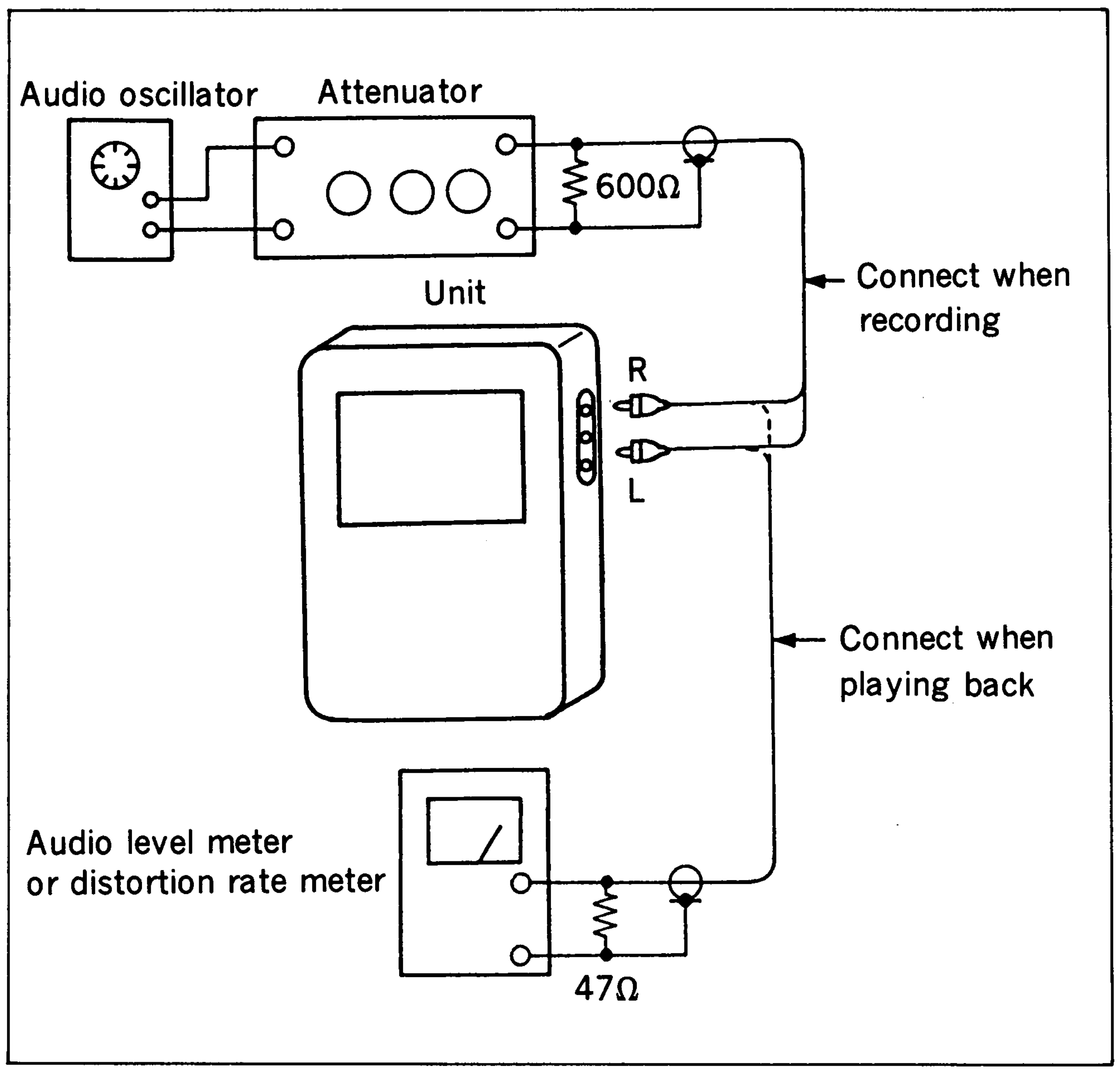
1) Connect the monitor TV.
2) Adjust the monitor TV to the most proper contrast and receive the broadcast TV signal.
3) Turn RV001 to show the snow noise.
4) Turn RV001 in the reverse direction, and set to the point that the snow noise disappears.
5) Receive each channel and check that there is no beat by the cross modulation, picture distortion and snow noise.

8-9. AUDIO SYSTEM ADJUSTMENT

- Adjust using the color bar signal as the video signal input.

[Connection of the measuring instruments for audio]

Connect the audio system measuring instruements as shown in the following figure as well as the video system measuring instruments. Set the power switch to the ⌈VTR⌋ side if there is no special direction.



Audio oscillator
Attenuator
600Ω
Unit
R
L
Connect when recording
Connect when playing back
Audio level meter or distortion rate meter
47Ω

Fig.8-30.

[VIDEO/AUDIO terminal of the unit]

The VIDEO and AUDIO (L/R) terminal has a function both input and output. The operation as the input terminal or as the output terminal is automatically selected according to the operation mode of the unit.
When connecting with other instruements, perform according to input-ouput of the terminal.

Operation mode of the unit and the input-output automatic selection of the terminal

Input mode selected with the INPUT SELECT button	The case that the unit is stopped or the recording mode is set	The case that the unit is set to the playback mode
TUNER (Television screen)	Output	Output
LINE*	Input	Output
CAMERA	Output	Output

*When the LINE is selected with the INPUT SELECT button, the display of INPUT and OUTPUT is shown.

[Setting of the switches]

Set the following mode if there is no special direction.

- SP/LP button ··························SP
- INPUT SELECT button ··························LINE
- AUTO STEREO switch ··························ON
- LINE AUDIO button··························ST
- AUDIO MONITOR button··························(S) and MAIN

[Notes]

- When the sound signal is input, input the same signal to both L and R channel if there is no special direction.
- Be sure to insert a plug (shorting plug or dummy plug) to the AUDIO R input-output terminal if there is no special direction. When a plug is not inserted, the monaural mode is set and the proper adjustment is not performed.
  (Monaural mode)
  At recording··················REC AFM RF 1.7MHz carrier is not ouput.
  At playing back ············L+R signal is output from the AUDIO L input-output terminal.

[Adjustment Procedures]

1.5MHz carrier frequency adjustment
1.7MHz carrier frequency adjustment
E-E output level check
1.5MHz carrier level check
1.7MHz carrier level adjustment
1.5MHz deviation adjustment
1.7MHz deviation adjustment note)
Recording matrix L+R adjustment
Recording matrix L−R adjustment
Playback matrix adjustment
Total level characteristic separation check
Total distortion rate check

Note) The adjustment method of the 1.7 MHz deviation adjustment is shown later.

8-9-1. 1.5MHz Carrier Frequency Adjustment (AU-53 board)

Mode	Recording
Signal	No signal
Mesurement point	IC101 Pin ⑬
Meauring instrument	Frequency counter
Adjustment element	RV102
Specified value	1.50±0.02MHz

Note : Use the 10 : 1 probe for connecting the frequency counter.

[Connection]

1) Short with the jumper wire between IC113 pin ㉕ (PLL PB) and CN101 Pin ① (SW 5V).

[Adjustment Method]

1) Adjust with RV102 to 1.5±0.02MHz.
2) Keep the jumper wire for connecting and perform the 1.7MHz carrier frequency adjustment.

8-9-2. 1.7MHz Carrier Frequency Adjustment (AU-53 board)

Mode	Recording
Signal	No signal
Mesurement point	IC201 Pin ⑬
Meauring instrument	Frequency counter
Adjustment element	RV202
Specified value	1.70±0.01MHz

Note : Use the 10 : 1 probe for connecting the frequency counter.

[Connection]

1) Short with the jumper wire between IC113 pin ㉕ (PLL PB) and CN101 Pin ① (SW 5V).

[Adjustment Method]

1) Adjust with RV202 to 1.70±0.01MHz.
2) After the adjustment, disconnect the jumper wire.

8-9-3. E-E Output Level Check

Mode	Camera recording
Signal	CN-6 board J601 Pin ⑤ [Pin ⑨] 400Hz, −15dBs
Measurement point	AUDIO L [R] Input-output terminal
Measuring instrument	Audio level meter
Specified value	−7.5±2dBs

[Checking Method]

1) Check that the 400Hz signal is −7.5±2dBs.

8-9-4. 1.5MHz Carrier Level Check (AU-53 board)

Mode	Recording
Signal	No signal (Both L and R 600Ωterminal)
Measurement point	CN102 Pin ③
Measuring instrument	Oscilloscope
Specified value	128±10mVp-p

[Preparation]

1) Terminate both L and R AUDIO terminals at 600Ω. The pin plug should not be inserted to the R terminal. (For setting to the monaural mode)

[Checking Method]

1) Check that the 1.5MHz REC AFM RF signal level is 128±10mVp-p. (Read the center level of the luminescent width.)

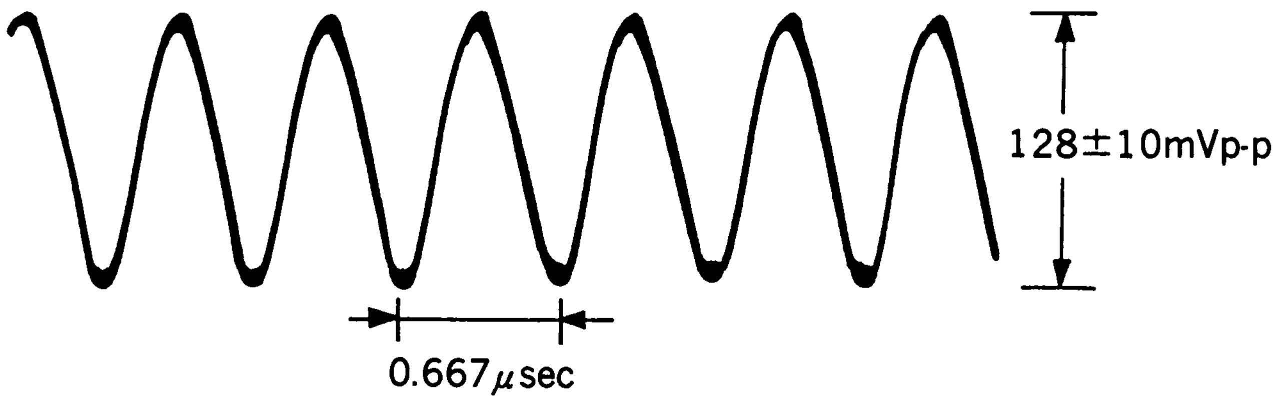


Fig.8-31.

8-9-5. 1.7MHz Carrier Level Adjustment (AU-53 board)

Mode	Recording
Signal	No signal (Both L and R 600Ωterminal)
Measurement point	CN102 Pin ③
Measuring instruement	Oscilloscope
Adjustment element	RV203
Specified value	(1.5MHz carrier level)−(1.7MHz carrier level)=27±10mV

[Preparation]

1) Terminate both L and R AUDIO terminals at 600Ω. Check that the dummy plug is inserted to the R terminal. (For setting the stereo mode)

[Adjustment Method]

1) Connect the capacitor of 0.01μF between IC201 pin ⑭ and GND.
2) Measure the 1.5MHz carrier level by the oscilloscope and write it down.
3) Disconnect the capacitor connected in the procedure 1).
4) Connect the capacitor of 0.01μF between IC101 Pin ⑭ and GND.
5) Measure the 1.7MHz carrier level by the oscilloscope and adjust with RV 203 to (1.5MHz carrier level)−(1.7MHz carrier level)=27±10mV.
6) Disconnect the capacitor connected in the procedure 4).

8-9-6. 1.5MHz Deviation Adjustment (AU-53 board)

Mode	Playback
Signal	Alignment tape: for operation check (WR5-4NSP)
Measurement point	CN101 Pin ⑤
Measuring instruement	Oscilloscope
Adjustment element	RV101
Specified value	925±21mVp-p (−7.5±0.2dBs)

[Adjustment Method]

1) Adjust with RV101 so that the 400Hz signal level is 925±21mVp-p.

8-9-7. Recording Matrix L+R Adjustment (AU-53 board)

Mode	Recording
Signal	1. 400Hz, −7.5dBs AUDIO L input-output terminal Input 2. 400Hz, −7.5dBs AUDIO R input-output terminal Input
Measurement point	IC104 Pin ①
Measuring instruement	Oscilloscope
Adjusment element	RV401
Specified value	The level difference at the L terminal input and the R terminal input is 0±5mVp-p.

Note: Measure the signal level after passing one minute or more from the signal input.

[Adjustment Method]

1) Input 400Hz and −7.5dBs signal to the AUDIO L input-output terminal. (Insert the shorting plug to the R terminal.)
2) Read the signal level of IC104 Pin ① and write it down.
3) Input 400Hz and −7.5dBs signal to the AUDIO R input-output terminal.
   (Insert the shorting plug to the L terminal.)
4) Adjust with RV401 so that the signal level of IC104 Pin ① is ±5mVp-p measured in the procedure 2).

8-9-8. Recording Matrix L−R Adjustment

Mode	Recording
Signal	400Hz, −7.5dBs Input to the both L and R terinal of AUDIO input- output terminal.
Measurement point	IC105 Pin ①
Measuring instrument	Oscilloscope
Adjustment element	RV402
Specified value	0±10mVp-p

Note : Use the 1 : 1 probe.

[Adjustment Method]

1) Adjust with RV402 so that the signal level of IC106 Pin ① is 0±10mVp-p.

8-9-9. Playback Matrix Adjustment (AU-53 board)

Mode	Playback
Signal	Alignment tape : for AFM stereo operation check (WR5-9NS)
Measurement point	CN101 Pin ⑤ and Pin ⑦
Measuring instruement	Oscilloscope
Adjustment element	RV204
Specified value	The distortion of the 400Hz output waveform of CN101 pin ⑤ and the 1kHz output waveform of pin ⑦ is the minimum.

[Adjustment Method]

1) Adjust with RV204 so that the distortion of the 400Hz output waveform of CN101 pin ⑤ and the 1kHz output waveform of pin ⑦ is the minimum.

8-9-10. Total Level Characteristic Separation Check

Mode	Self playback
Signal	400Hz, −7.5dBs : AUDIO L [R] input-output terminal No signal (Insert a shorting plug.) : AUDIO R [L] input-output terminal
Measurement point	AUDIO L [R] input-output terminal
Measuring instrument	Audio level meter
Specified value	Signal level : −7.5±2dBs Cross talk level : −25.0dBs or less

Note : Be sure to insert the dummy plug to the R terminal when measuring the L side playback output level.

[Checking Method]

1) Record the signal.
2) Connect the audio level meter to the AUDIO L [R] input-output terminal.
3) Play back the recorded part and check that the L [R] output signal level is −7.5±2dBs.
4) Check that the R [L] output cross talk level is −25.0dBs or less.

8-9-11. Total Distortion Rate Check

Mode	Self playback
Signal	400Hz, −7.5dBs Input both L and R AUDIO input-output terminals
Measurement point	AUDIO L [R] input-output terminal
Measuring instrument	Distortion Rate Meter
Specified value	1.2% or less

Note : Be sure to insert the dummy plug to the R terminal when measuring the L side playback distortion rate.

[Checking Method]

1) Record the signal.
2) Connect the distrotion rate meter to the AUDIO L [R] input-output terminal.
3) Play back the recorded part and check that the distortsion rate of the L [R] output is 1.2% or less.

8-9-8. Recording Matrix L—R Adjustment

Mode	Recording
Signal	400Hz, −7.5dBs Input to the both L and R terinal of AUDIO input- output terminal.
Measurement point	IC105 Pin ①
Measuring instrument	Oscilloscope
Adjustment element	RV402
Specified value	0±10mVp-p

Note: Use the 1 : 1 probe.

[Adjustment Method]

1) Adjust with RV402 so that the signal level of IC106 Pin ① is 0±10mVp-p.

8-9-9. Playback Matrix Adjustment (AU-53 board)

Mode	Playback
Signal	Alignment tape: for AFM stereo operation check (WR5-9NS)
Measurement point	CN101 Pin ⑥ and Pin ⑦
Measuring instrument	Oscilloscope
Adjustment element	RV204
Specified value	The distortion of the 400Hz output waveform of CN101 pin ⑥ and the 1kHz output waveform of pin ⑦ is the minimum.

[Adjustment Method]

1) Adjust with RV204 so that the distortion of the 400Hz output waveform of CN101 pin ⑥ and the 1kHz output waveform of pin ⑦ is the minimum.

8-9-10. Total Level Characteristic Separation Check

Mode	Self playback
Signal	400Hz, −7.5dBs: AUDIO L [R] input-output terminal No signal (Insert a shorting plug.): AUDIO R [L] input-output terminal
Measurement point	AUDIO L [R] input-output terminal
Measuring instrument	Audio level meter
Specified value	Signal level : −7.5±2dBs Cross talk level : −25.0dBs or less

Note ; Be sure to insert the dummy plug to the R terminal when measuring the L side playback output level.

[Checking Method]

1) Record the signal.
2) Connect the audio level meter to the AUDIO L [R] input-output terminal.
3) Play back the recorded part and check that the L [R] output signal level is −7.5±2dBs.
4) Check that the R [L] output cross talk level is −25.0dBs or less.

8-9-11. Total Distortion Rate Check

Mode	Self playback
Signal	400Hz, −7.5dBs Input both L and R AUDIO input-output terminals
Measurement point	AUDIO L [R] input-output terminal
Measuring instrument	Distortion Rate Meter
Specified value	1.2% or less

Note ; Be sure to insert the dummy plug to the R terminal when measuring the L side playback distortion rate.

[Checking Method]

1) Record the signal.
2) Connect the distrotion rate meter to the AUDIO L [R] input-output terminal.
3) Play back the recorded part and check that the distortion rate of the L [R] output is 1.2% or less.

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Personal Video Group

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GV-S50

SERVICE MANUAL

US Model
Canadian Model

VIDEO
WALKMAN

A MECHANISM

SPECIFICATIONS

GV-S50

System

Video recording system	Rotary two-head helical scanning FM system
Audio recording system	Rotary head, FM stereo system
Video signal	EIA standard, NTSC color
Usable cassettes	8 mm video format cassettes
Tape speed	SP: approx. 1.43 cm/sec. LP: approx. 0.72 cm/sec.
Recording time	SP mode: 2 hours LP mode: 4 hours (with Sony P6-120 cassette)
Playback time	SP mode: 2 hours LP mode: 4 hours (with Sony P6-120 cassette)
Fast forward/rewinding time	Approx. 8 minutes (with Sony P6-120 cassette)

LCD section

Picture	4 inches measured diagonally 8.2 x 6.2 cm ($3^1/_4$ x $2^1/_2$ inches)
On-screen display	TN LCD/TFT active matrix method Total dot number: 89,856 (384 x 234)

Inputs/outputs

VIDEO/AUDIO IN/OUT	Selectable automatically according to the operation
Video input	Phono jack, 1 Vp-p, 75 ohms, unbalanced, sync negative
Video output	Phono jack, 1 Vp-p, 75 ohms, unbalanced, sync negative
Audio input	Phono jack, –7.5 dBs (0 dBs=0.775 Vrms), input impedance more than 47 kilohms
Audio output	Phono jack, –7.5 dBs (330 mV) at load impedance 47 kilohms, output impedance less than 10 kilohms
Speaker	7.2 ohms, 200 mW
Phones	Minijack, 8 ohms
⟲ REMOTE (LANC)	Stereo mini-minijack

General

Power requirements	Battery mounting surface input: 6.0 V (battery pack), 7.5 V (AC power adaptor), 6.5 V (DC pack DCP-77)
Power consumption	6.7 W (for continuous playback)
Operating temperature	0°C to 40°C (32°F to 104°F)
Storage temperature	–20°C to 60°C (–4°F to 140°F)
Dimensions	148.5 x 83 x 127 mm (w/h/d) ($5^7/_8$ x $3^3/_8$ x 5 inches)
Weight	Approx. 980 g (2 lb 3 oz) not including battery pack
Accessories supplied	Tuner timer unit TGV-3 (1) Battery pack NP-55H (1) AC power adaptor AC-S10 (1) Stereo earphones (1) Signal splitter (1) Lithium battery CR2032 (1)

AC-S10

Power consumption	20 W
Power requirements	100-240 V AC, 50/60 Hz
Output voltage	DC OUT: 7.5 V, 1.6 A in operating mode
Battery charge terminal:	10 V, 1.3 A in charge mode
Operating temperature	0°C to 40°C (32°F to 104°F)
Storage temperature	–20°C to +60°C (–4°F to 140°F)
Dimensions	Approx. 72 x 39 x 141 mm (w/h/d) ($2^7/_8$ x $1^9/_{16}$ x $5^5/_8$ inches) including projecting parts and controls
Weight	Approx. 330 g (12 oz.)

Design and specifications are subject to change without notice.

— Continued on next page —

8 VIDEO RECORDER/MONITOR

SONY®

MICROFILM

List of Recommended Accessories

	Model Name	Page
Battery pack	NP-77HD, NP-77H, or NP-66H	13
Battery charger	BC-S10 or BC-77	13
Car battery charger	DC-S10	17
DC pack	DCP-77	17
Connecting cord	VMC-910S/920S (1 m/2 m)	30, 32, 34, 35, 36, 37
Cleaning cassette	V8-25CLH	38

TGV-3

Tuner section

Channel coverage	VHF: 2–13 channels UHF: 14–69 channels Cable TV channels: (A-8–A-6), (A-2–W), (W+30–W+84)
Antenna input	75-ohm minijack for VHF/UHF

Timer section

Clock	Crystal lock
Time indication	12-hour cycle
Timer setting	Only for recording, 6 events/month

General

Power requirements	Power is supplied from the GV-S50 video recorder/monitor.
Power consumption	1.3 W
Operating temperature	0°C to 40°C (32°F to 104°F)
Storage temperature	–20°C to 60°C (–4°F to 140°F)
Dimensions	34.5 × 64.5 × 121.5 mm (w/h/d) ($1\,{}^{3}/_{8} \times 2\,{}^{5}/_{8} \times 4\,{}^{7}/_{8}$ inches)
Mass	Approx. 170 g (6 oz)

Design and specifications are subject to change without notice.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

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SECTION 1
GENERAL

This section is extracted from GV-S50 instruction manual.

1-1. GV-S50

Precautions

- Operate the unit on 6.0 V (battery pack)/7.5 V (AC power adaptor)/6.5 V (DC pack DCP-77).
- Do not operate the unit where the temperature is below 0°C (32°F) or above 40°C (104°F).
- For DC or AC power supply, use the accessories supplied or recommended in this manual.
- Should any solid object or liquid fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Avoid rough handling or mechanical shock to the unit.
- Do not apply excessive force to the LCD (Liquid Crystal Display).
- Remove and store video cassettes after recording or playback.
- Do not wrap up the unit and operate it because heat may build up internally.
- Avoid using and storing the unit in the following locations:
  - susceptible to vibration
  - exposed to strong magnetic fields
  - near TV or radio transmitters where strong radio waves are generated
  - on the sand

Preliminary

Overview of the GV-S50

The Video Walkman GV-S50 is an 8 mm video recorder/monitor with a 4-inch LCD (Liquid Crystal Display). Its compact and lightweight design allows you to play back video tapes anywhere and any time you like.

Only with this video recorder/monitor, you can watch playback pictures of 8 mm video tapes, but, with the supplied TGV-3 tuner timer unit installed, you can watch and record TV programs anywhere and anytime you like.

A variety of optional accessories or equipment allows you to make the best use of the GV-S50.
- By connecting another VCR, you can edit video tapes.
- By connecting a video camera recorder (not supplied), you can use this unit as a monitor, and play back the recorded pictures immediately.

Features

- **Easy-to-use Menu screen**
- **AFM Hi-fi stereo for high quality sound***
- **CRYSTAL-CLEAR still/slow picture on LCD**
- **MEGABASS circuit for dynamic bass sound**
- **Playback of tapes recorded in Hi8 video system****
- **Remaining battery capacity indication**
  Shows you the remaining capacity of the battery.
- **REMOTE terminal**
  Allows remote control of this unit by other Sony video equipment.

The GV-S50 uses 8 mm video format cassettes. It records in SP mode (approximately 1.43 cm/second) and LP mode (Approximately 0.72 cm/second) and can play back in SP and LP modes. The quality of the playback picture in LP mode, however, will not be as good as that in SP mode.

PCM (Pulse Code Modulation) recording/playback, that is, digital recording/playback, is not possible with this unit. The PCM sound recorded with another recorder cannot be played back with this unit.

For using this unit abroad, see page 39.

*** AFM Hi-fi Stereo System**

On the 8 mm video standard track, the sound is recorded/played back in AFM Hi-fi monaural. The PCM digital stereo sound is recorded/played back on the PCM track as an option. With this unit, AFM Hi-fi stereo sound can be recorded on the standard track.
To maintain compatibility with the conventional AFM Hi-fi monaural equipment, the AFM Hi-fi stereo sound is recorded as L – R sound using the 1.7 MHz carrier and L + R sound using the 1.5 MHz carrier as the FM audio signal.
To playback the tape recorded by its AFM Hi-fi stereo system, this unit uses a matrix circuit to produce the L and R stereo sounds separately. When conventional Hi-fi monaural equipment is used to play back a tape recorded in AFM Hi-fi stereo, it will produce the L + R monaural sound because it can reproduce only the 1.5 MHz carrier.
The AFM Hi-fi stereo system of this unit provides a live stereo sound atmosphere even when using the 8 mm video standard track.

**** Hi8 playback**

Playback of tapes recorded in SP mode of Hi8 video system is possible on this unit.
- Recording in Hi8 video system is impossible.
- Playback of tapes recorded in LP mode of Hi8 system is impossible.
- High resolution which a conventional Hi8 VCR give the picture cannot be obtained.
- Noise may appear on the screen during playback.

Menu Screen

You can perform certain operations by selecting them from the menu screen.
The menu appears on the screen when you press MENU. Select the desired item on the menu screen.
For more details, see reference pages in the tables below.

Menu screen

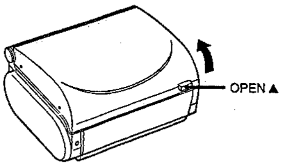
Menu item	Setting purpose	Reference page
SOUND	To obtain dynamic bass sound	21, 25–26, 28, 30, 32
REC MODE	To select the tape speed (SP or LP)	25–26, 28, 30, 32
HUE	To adjust tints	23, 25–26
COLOR	To adjust the depth of colors	23, 25–26
SLOW TRACKING	To adjust the tracking for still picture or slow picture search	22, 25–26

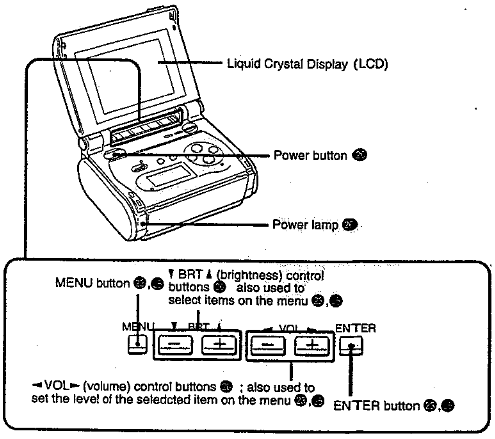
Location of Parts and Controls

For details, refer to the pages indicated in circles.

Parts and Controls for Adjusting the LCD and for Using the Menu Screen

Push OPEN ▲ and pull up the display first.

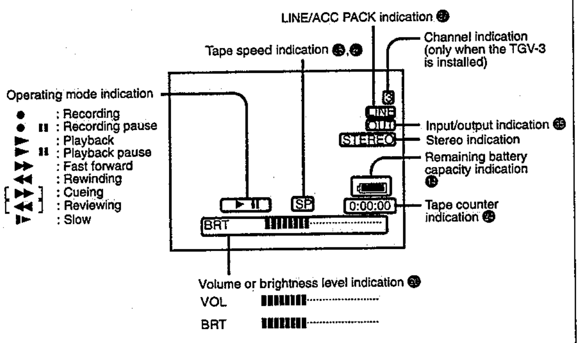




Liquid Crystal Display (LCD)
Power button ㉖
Power lamp ㉗
MENU button ㉙,㊺
▼BRT▲ (brightness) control buttons ㉙ also used to select items on the menu ㉓,㊺
MENU
▼ BRT ▲
◄ VOL ►
ENTER
◄VOL► (volume) control buttons ㉚ ; also used to set the level of the seledcted item on the menu ㉓,㊺
ENTER button ㉓,㊺

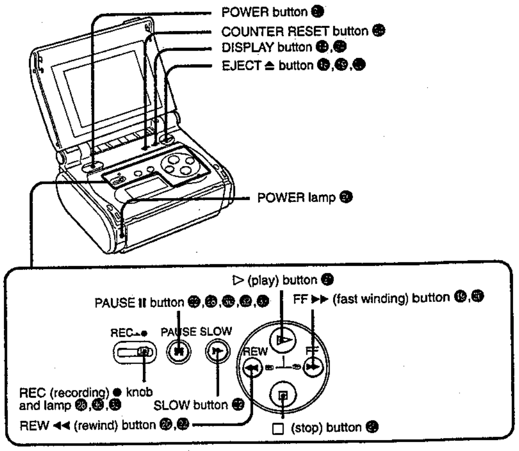
Location of Parts and Controls

On-Screen Displays


LINE/ACC PACK indication
Tape speed indication
Channel indication (only when the TGV-3 is installed)
Operating mode indication
● : Recording
● ❚❚ : Recording pause
▶ : Playback
▶ ❚❚ : Playback pause
▶▶ : Fast forward
◀◀ : Rewinding
[▶▶] : Cueing
[◀◀] : Reviewing
❚▶ : Slow
3
LINE
OUT
STEREO
Input/output indication
Stereo indication
Remaining battery capacity indication
▶ ❚❚
SP
0:00:00
Tape counter indication
BRT
Volume or brightness level indication
VOL
BRT

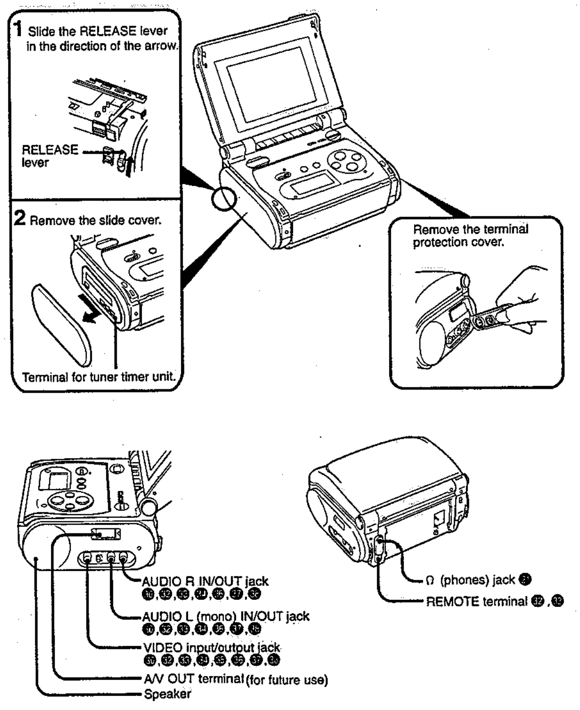
Note
All indications are illustrated as if they were actually displayed at the same time; however some of them are not displayed at the same time.

Parts and Controls for Playback and Recording


POWER button
COUNTER RESET button
DISPLAY button
EJECT ⏏ button
POWER lamp
▷ (play) button
PAUSE ❚❚ button
FF ▶▶ (fast winding) button
REC●
PAUSE SLOW
REW
FF
REC (recording) ● knob and lamp
SLOW button
REW ◀◀ (rewind) button
☐ (stop) button

Location of Parts and Controls

Parts for Connections


1 Slide the RELEASE lever in the direction of the arrow.

2 Remove the slide cover.

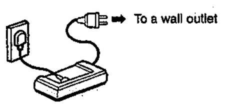
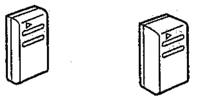
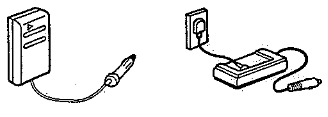
Remove the terminal protection cover.

RELEASE lever
Terminal for tuner timer unit.
AUDIO R IN/OUT jack
AUDIO L (mono) IN/OUT jack
VIDEO input/output jack
A/V OUT terminal (for future use)
Speaker
Ω (phones) jack
REMOTE terminal

Getting Started

Power Sources

You can select the best power source for your own needs.

Place	Power source	Page
Indoors	AC power adaptor AC-S10 (supplied)  To a wall outlet	12
Outdoors	Battery pack NP-55H (supplied) NP-66H, NP-77HD or NP-77H  NP-55H NP-77H	13
In a car	DC pack DCP-77 or Car battery charger/adaptor DC-S10 	17

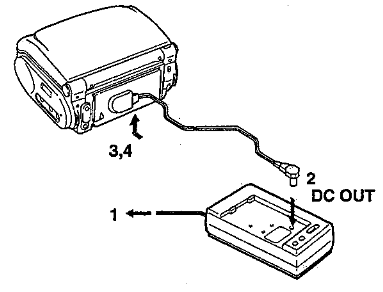
Only the AC-S10 and the NP-55H are supplied; the other accessories for your special needs are available from your Sony dealer.

Disconnecting the power source during recording or playback operations may damage the inserted cassette tape. If this should happen, supply power again immediately and turn on the power.

Power Sources

Using a Wall Outlet for Indoor Use

Use the supplied AC-S10 AC power adaptor.



1 **Plug in the AC power adaptor to a wall outlet.**
The POWER lamp (green) on the AC-S10 lights up and the power turns on.

2 **Insert one end of the connecting cord (supplied with the AC-S10) into the DC OUT jack of the AC-S10.**

3 **Align the upper side edge of the connecting plate with the white line printed on the video recorder/monitor so that the slots of the connecting plate (the other end of the connecting cord) are postitioned over the tabs of the battery mounting surface.**

4 **Press the connecting plate and slide it in the direction of the ► mark.**

To remove the connecting plate

Slide out the connecting plate while sliding the BATT release knob.

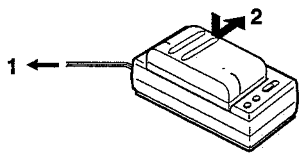
CAUTION
TO PREVENT ELECTRIC SHOCK, DO NOT USE THIS POLARIZED AC PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

- The unit is not disconnected from the AC power source as long as it is connected to a wall outlet.
- One blade of the plug is wider than the other for the purpose of safety and will fit into a wall outlet only one way. If you are unable to insert the plug fully into the outlet, contact your dealer.
- While the unit is in use, particularly during charging, keep it away from AM receivers and video equipment because it will disturb AM reception and video operation.

Using a Battery Pack for Outdoor Use

To charge a battery pack

Before using a battery pack, make sure to charge it first even if it is newly purchased. Beside the supplied NP-55H battery pack, optional NP-66H, NP-77HD and NP-77H battery packs, as described on page 11, are available.
Use the supplied AC-S10 AC power adaptor to charge a battery pack.



1 **Plug in the AC power adaptor to a wall outlet.**
The POWER lamp (green) on the AC-S10 lights up and the power turns on.

2 **Install the battery pack in the AC-S10.**
Align the flat side of the battery pack with the line on the AC-S10. Then push down and slide the battery pack in the direction of the arrow. The REFRESH lamp (red) lights up first and then it goes out. When the CHARGE lamp (orange) lights up, battery charging begins. When the battery is charged, the CHARGE lamp goes out. Unplug the AC power adaptor and the POWER lamp goes out. (Refer to the instructions provided for the AC-S10 as well.)

Required charging time:

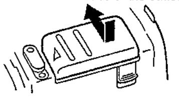
NP-55H (supplied)	NP-66H	NP-77H	NP-77HD
70 min.	100 min.	140 min.	140 min.

(Approx. minutes using AC-S10)

- The battery pack cannot be charged when using the AC power adaptor is used to operate the unit.
- An NP-55H, NP-66H, NP-77HD and NP-77H battery pack can also be charged with the BC-S10 or BC-77 battery charger.

To attach a battery pack to this unit

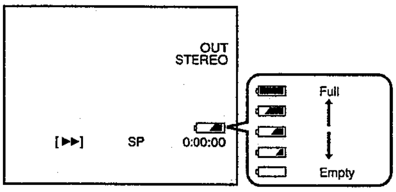
Align the upper side edge of the battery with the white line printed on the video recorder/monitor so that the slots of the battery are positioned over the tabs of the battery mounting surface, and slide the battery pack while pressing it.



Power Source

To check the remaining battery capacity

When a battery pack is installed, press DISPLAY to show on the screen the remaining battery capacity as well as other indications (see page 8 for other indications).
To cancel this display, press DISPLAY again.

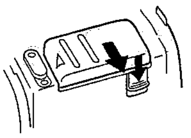


A fully-charged battery pack lasts for:

	NP-55H	NP-66H	NP-77H	NP-77HD
Playback (with TGV-3 connected)	Approx. 50 min.	Approx. 75 min.	Approx. 100 min.	Approx. 100 min.
Recording (without TGV-3 connected)	Approx. 60 min.	Approx. 90 min.	Approx. 120 min.	Approx. 120 min.
Watching TV programs	Approx. 60 min.	Approx. 90 min.	Apprpx. 120 min.	Approx 120 min.
Recording TV programs	Approx 50 min.	Approx. 75 min.	Approx. 100 min.	Approx. 100 min.

To remove the battery pack

While sliding the BATT release knob in the direction of the arrow, slide out the battery pack as illustrated.

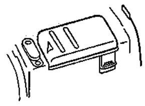


Note
If you use the NP-77HD battery pack which has the battery life indicator, the remaining battery capacity indicated on the LCD may be different from that indiacted by the NP-77HD battery pack. The indicator on the NP-77HD battery pack is more accurate.

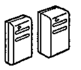
Using the Battery Pack Efficiently

Preparing battery packs

Prepare 2 or 3 times more battery power than you plan to use.
The published battery capacity is measured in a continuously playing VCR at room temperature starting with a fully charged battery. Fast winding or rewinding uses much power than normal playing. Consequently, battery consumption becomes faster when these operations are performed frequently.

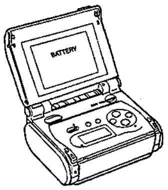


Battery consumption is faster in a cold climate
Cold climates reduce the efficiency of a battery and cause it to run out more quickly.



When to replace battery packs

When a battery pack is fully discharged, the POWER lamp starts blinking slowly. During recording, "BATTERY" also starts lighting on the screen. Replace the battery when the POWER lamp starts blinking rapidly.
Turn off the video recorder/monitor power before replacing the battery. Especially during recording, keep the cassette inside the cassette holder while replacing the battery. When a fresh battery is attached, recording can be resumed smoothly without any picture distortion.



Notes on charging

Before using a battery pack, charge it fully. A newly purchased battery pack also needs to be charged before its first use.

Recharge a battery pack only when it is fully used out
Avoid recharging only partly used battery packs. Repeated charging of partly discharged battery packs reduces their capacity and shortens their overall life span. The original capacity can sometimes be recovered by fully discharging and then fully recharging the battery pack.

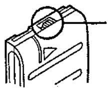
Power Source

Rechargeable battery packs

Battery pack care

- Remove the battery pack from the video recorder/monitor after use, and keep it in a cool place. When the battery pack is installed on a video recorder/monitor, a small amount of current flows to the recorder even if the POWER switch is turned off. This causes overdischarge and so shortens battery life.
- The battery pack is always discharging a little even when not in use. Thus, the battery should be charged before each use.
- If the terminals (metal parts on the back) are dirty, the battery capacity will be reduced. When the terminals are dirty, or when the battery pack has not been used for a long time, attach and remove it several times. This will improve the contact between the battery pack and the video recorder/monitor. Also, wipe the + and - terminals with a soft cloth or paper.
- If the battery pack is not used for a long time (about 1 year) and you charge it again, the battery capacity will be reduced. After several charging and discharging cycles, the battery will recover its original capacity.

How to use the switch on the battery pack



Use this switch as a reminder of charging.
Set the switch to the no-marked position when the charging is completed.
Set the switch to the red-marked position when the battery is discharged.

Battery life

A battery can be fully charged and discharged about 500 times under normal temperatures. If "BATTERY" appears just after turning on the recorder, even though a fully charged battery pack has been installed, replace the battery pack with a new one.

Best temperature for charging

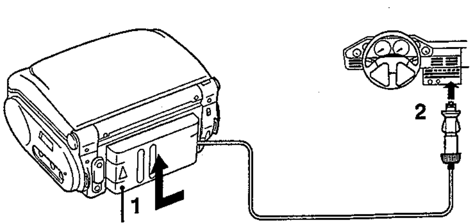
A lower temperature requires a longer charging time.
Charging under a temperature ranging from 10°C to 30°C (50°F to 86°F) is recommended.

Why a battery pack heats up

While a battery pack is being charged or used, the chemical change occurring inside the battery pack release heat. The battery pack becomes warm, but this is normal and not dangerous.

> **Warning**
> If the + and - terminals are short-circuited with a piece of metal, the battery heats up abnormally. This is very dangerous. Never put an uncovered battery pack in a pocket together with a key holder or other metals .

Using a Car Battery



DCP-77 (not supplied)

1 **Attach the DC pack to the video recorder/monitor by aligning the upper side edge of the DC pack with the white line on the video recorder/monitor and slide the DC pack in the direction of the ► mark while pressing it.**

2 **Plug the power cord into the cigarette lighter socket.**

- Only connect the DCP-77 to a car with a negative ground 12 V or 24 V battery.
- The DCP-55 is not recommended for this unit because its power is not enough to operate this unit.

Notes

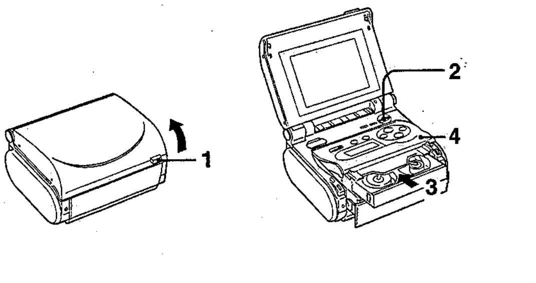
- Be careful not to let any metal object touch the metal projection on the battery pack. When the battery pack is not in use, keep it in its case.
- Keep the video recorder/monitor away from any power source. Such sources may cause noise to appear on the screen.

> **Cautions on using this unit in a car**
> - For your safety, do not watch video tapes or operate the controls while driving.
> - Avoid leaving the unit in a place with very high temperatures. If you do, it may cause distortion of the cabinet or malfunction of the unit.
> - If you use this unit while the car engine is stopped, the car battery will be discharged. Avoid running this unit from the car battery more than 12 hours without recharging it.
> - Remove the car battery cord from the cigarette lighter socket if you do not use the unit for a long time.

Playing Back Tapes

Make sure that the power source is attached to this unit.

Inserting a Cassette



1 **Push OPEN ▲ and open the display.**

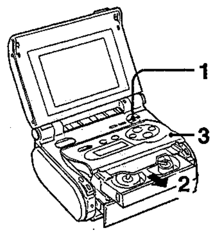
2 **Press EJECT ≜.**
The cassette holder opens automatically.
Do not open the cassette holder forcibly.
EJECT

3 **Insert a cassette with the window side facing up.**

4 **Press the PUSH mark.**
The cassette holder closes automatically.

When you press EJECT ≜, power is supplied and the cassette holder opens even if the power is turned off. After the cassette holder opens, the power goes off automatically. Press POWER if you want to continue the operation.

Ejecting a Cassette



1 **Press EJECT ≜.**
Make sure the tape is not running.
EJECT

2 **Remove the cassette.**

3 **Press the PUSH mark.**
The cassette holder closes automatically.

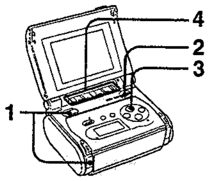
Notes on opening and closing the cassette holder

- Do not insert your finger into the cabinet while the cassette holder is open.
- Be careful not to get your finger caught in the cassette holder.

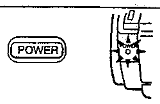
Cassette care

- Store cassettes in their cases when they are not in use and keep them in an upright position to keep out dust and prevent uneven winding.
- Never insert a cassette upside down into the cassette holder.
- Never cover the small holes on the rear of a cassette or insert anything into the holes.
- Remove a cassette from the video recorder/monitor when it is not in use.

Watching Video Tapes



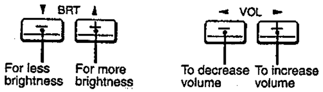
1 **Press POWER.**
The POWER lamp lights.



2 **Insert a recorded tape as explained on page 18.**

3 **Press ⊳ (play).**
Playback starts.

4 **Press BRT – or + and VOL – or + to adjust the brightness and the volume respectively.**
The volume and brightness level indication bars appear on the screen.


▼ BRT ▲
◄ VOL ►
For less brightness
For more brightness
To decrease volume
To increase volume

To stop playback	To rewind the tape	To advance the tape
Press □ (stop).	Press REW ◄◄.	Press FF ►►.

If power supply is interrupted
The levels of volume and brightness are automatically set to the center point on the level indication bars on the screen.

To turn off the power to this unit
Press POWER again so that the POWER lamp goes off.

To rewind the tape and play it back automatically — Auto play
Press ⊳ (play) while pressing REW ◄◄.

To mute the picture and sound
Close the LCD so that the LCD turns off and that sounds are not heard from the speaker.
To restore the picture and sound, push OPEN ▲ and pull the LCD up.

For private listening in stereo
Connect the supplied stereo earphones to the ∩ (phones) jack. No sound will be heard from the speaker.

Listening to Stereo and Dynamic Bass (MEGABASS) Sound

You can listen to dynamic bass sound in stereo by using the supplied stereo earphones; however, you cannot listen to this sound though the speaker.

Relation between outputs and sound effects

	Stereo effect	MEGABASS effect
Earphones	Active	Active
Speaker	Inactive	Inactive
Line output	Active	Inactive

To activate MEGABASS Sound
Select "MEGABASS" from "SOUND" on the menu screen. For details on the procedure, see pages 25 and 26.

To inactivate MEGABASS, select "NORMAL" from "SOUND" on the menu screen.

Various Playback Modes

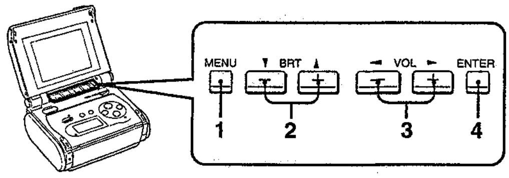
To stop the tape for a moment — Still picture	During playback PAUSE (II) ► II	To resume normal playback, press ⊳ or PAUSE II. This mode will be automatically released and the unit will stop after five minutes.
To view the slow playback picture	During playback SLOW (I►) ►	To resume normal playback, press ⊳. (or normal playback resumes automatically after one minute.)
To locate a particular point while viewing the picture — Picture search	During playback REW (◄◄) [◄◄] During playback FF (►►) [►►]	When you release the button, the unit will return to the previous mode.
To view the picture at high speed — FR picture search	During rewinding REW (◄◄) [◄◄] During forwarding FF (►►) [►►]	

If streaks appear in slow playback pictures on LCD
Adjust the pictures during slow playback, by using the menu screen, so that streaks disappear from the pictures. For details on the procedure to adjust "SLOW TRACKING" on the menu screen, see pages 25 and 26.

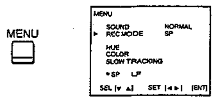
When the playback picture is viewed on another TV or monitor
The pictures may possibly become black and white or shakes vertically in picture search and FR picture search modes. Moreover, noise appears in the still and slow pictures.

Adjusting the Picture

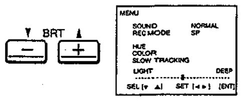
You can adjust tints and the depth of colors on the menu screen.


MENU
▼ BRT ▲
◄ VOL ►
ENTER
1
2
3
4

1 **Press MENU.**
The menu screen appears.

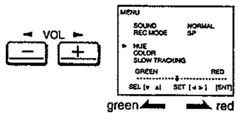

MENU
MENU
SOUND NORMAL
► REC MODE SP
HUE
COLOR
SLOW TRACKING
•SP LP
SEL [▼ ▲] SET [◄ ►] [ENT]

2 **Press ▼ or ▲ to select the item to adjust.**

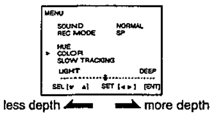

▼ BRT ▲
MENU
SOUND NORMAL
REC MODE SP
HUE
COLOR
SLOW TRACKING
LIGHT DEEP
SEL [▼ ▲] SET [◄ ►] [ENT]

3 **Press ◄ or ► to make adjustments.**
Each time you press ◄ or ►, the selected item is adjusted as shown below.

To adjust tints


◄ VOL ►
MENU
SOUND NORMAL
REC MODE SP
► HUE
COLOR
SLOW TRACKING
GREEN RED
SEL [▼ ▲] SET [◄ ►] [ENT]
green
red

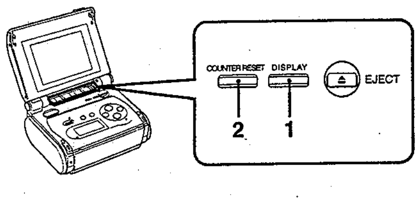
To adjust the depth of colors


MENU
SOUND NORMAL
REC MODE SP
HUE
► COLOR
SLOW TRACKING
LIGHT DEEP
SEL [▼ ▲] SET [◄ ►] [ENT]
less depth
more depth

4 **Press ENTER.**

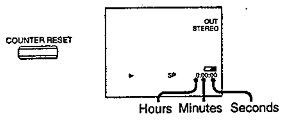
Using the Tape Counter

The counter indicates the tape transport in hours, minutes and seconds. During playback or recording, it shows you the playback or recording time.



1 Press DISPLAY.
The tape counter appears on the screen.

2 Press COUNTER RESET during playback or recording at the point you want to locate later.
The counter is reset to 0:00:00.



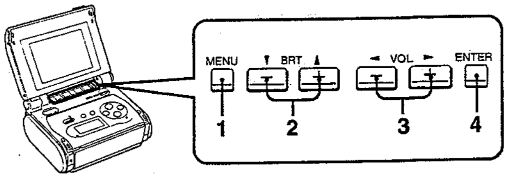
Notes

- When you play back a blank tape, the tape counter does not function.
- The counter reading and the point on the tape may not correspond exactly. Use the counter as a guide.
- The difference between the counter reading and the point on the tape may increase by several seconds in the following cases:
  - after repeated fast-forward and rewinding
  - when playing back a tape recorded both in SP and LP modes
  - when playing back a tape having a blank portion between recorded portions

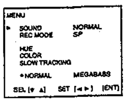
Settings on the Menu Screen

You can set five items on the menu screen. You can use this unit with the settings preset at the factory (indicated by ● in the list on page 26).
If you want to change the settings, follow the procedure described below.

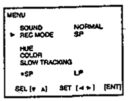
Operation



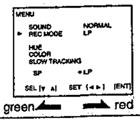
1 Press MENU.
The menu screen appears.


MENU
▶ SOUND NORMAL
REC MODE SP
HUE
COLOR
SLOW TRACKING
●NORMAL MEGABASS
SEL [▼ ▲] SET [◀ ▶] [ENT]

2 Press ▼ or ▲ to select the item to adjust.


MENU
SOUND NORMAL
▶ REC MODE SP
HUE
COLOR
SLOW TRACKING
●SP LP
SEL [▼ ▲] SET [◀ ▶] [ENT]

3 Press ◀ or ▶ to select the setting you want
Each time you press ◀ or ▶, the selected setting changes and is indicated by ● .


MENU
SOUND NORMAL
▶ REC MODE LP
HUE
COLOR
SLOW TRACKING
SP ●LP
SEL [▼ ▲] SET [◀ ▶] [ENT]

4 Press ENTER.

Note
You cannot cancel the setting procedure once you start changing the setting.

Menu Screen List

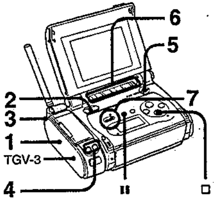
Items	Settings	Setting purpose	When to use
SOUND	● NORMAL	To inactivate the MEGABASS effect	
	MEGABASS	To emphasize bass sound	When emphasizing bass sound
REC MODE	● SP	To record at normal speed	When recording
	LP	To record at double normal speed	
HUE	Level indication bar*	To adjust tints	When the colors of picture are strange
COLOR	Level indication bar*	To adjust the depth of color	
SLOW TRACKING	Level indication bar*	To adjust the tracking for slow motion playback picture	When watching slow motion pictures

●: factory setting
* Levels are set at the middle of the bar at the factory.

Recording a TV program

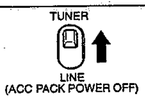
You cannot watch or record a TV program on this unit since this unit does not have a built-in tuner. However, if you install the supplied TGV-3 tuner timer unit to this unit, you can watch and record a TV program.
Here's only explanation of how to record a TV program after connecting the tuner to this unit. For installation, channel preset, channel selection, etc., refer to the instruction manuals supplied with the TGV-3.

Operation



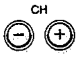
1 Install the TGV-3 tuner timer unit to this unit, and carry out the necessary setting, such as channel preset, on the TGV-3. (For more details, refer to the instruction manual supplied with the TGV-3.)

2 Set the TUNER/LINE selector on the rear of the TGV-3 to TUNER.

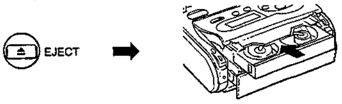


3 Turn on the power of this unit
"ACC PACK" appears on the screen for several seconds.

4 Press CH –/+ on the TGV-3 to select the TV program to be recorded.



5 Insert a cassette as explained on page 18.



Recording a TV Program

6 **Select the tape speed ("SP" or "LP" from "REC MODE") on the menu screen of this unit.**
See "Settings on the Menu Screen" on pages 25 and 26.

7 **Slide REC on this unit in the direction of the arrow.**
Recording starts.

To pause recording Press PAUSE ⏸. **To resume recording** Press PAUSE ⏸ again. If you do not press PAUSE ⏸ again within five minutes, the pause mode will be released automatically and the unit will stop.	**To stop recording** Press ☐ (stop).

When changing the channel while recording
Set this unit in recording pause mode and then select another channel. You cannot watch another program while recording.

When recording from the beginning of the tape
Advance the tape for about 15 seconds before recording. This will prevent missing the starting point when playing back on another VCR.

When the tape is recorded to the end
The tape stops automatically, but the unit is not turned off. If you are not going to continue operation, turn off the power by pressing POWER.

About recorded sound
Recording level is always fixed automatically.
The VOL – and + have no effect on the recorded sound level.

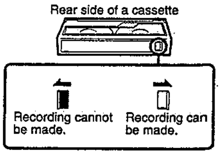
If power supply is interrupted while recording
Recording stops.

Recording/playback time
Two tape speeds (SP/LP) can be selected on the menu screen (see pages 25 and 26).
The recording time in LP mode is twice as long as that in SP mode. For better picture and sound, recording in SP mode is recommended. During playback, the mode in which the tape has been recorded is selected automatically.

Difference in color systems
There are different formats of the TV color broadcast and electricity system: NTSC, PAL and SECAM. Video cassette tapes are made to correspond to one of these formats. Use NTSC format cassette tapes for this unit. You will find "P6" on the package of NTSC cassettes.

To prevent accidental erasure
Slide out the tab on the back of the cassette so that red color is visible.

To re-record on the cassette, slide the tab back.



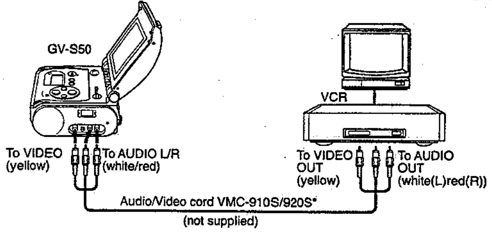
Note
If you record, using this unit, on a tape that has been recorded with PCM sound, and then if you play back this tape on a VCR with PCM function, the sound may be cut off occasionally. If this happens, set the audio monitor switch of the VCR to the standard position.

Editing Tapes

You can not record a TV program since this unit does not have a built-in tuner. However, you can edit a tape with the another VCR (8 mm, Beta, or VHS format) connected through the VIDEO/AUDIO input/output jacks of this unit.

Editing from Another VCR

Connection



* If the other VCR is monaural type, use the VMC-910MS or VMC-920MS (not supplied).

Operation

1 **Turn on the power of both units.**

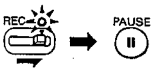
2 **Insert a source tape into the other unit (playback) and a tape for recording into this unit (recording).**
If the supplied TVG-3 tuner timer unit is installed, set the TUNER/LINE selector to LINE.

3 **Select the tape speed ("SP" or "LP" from "REC MODE") on menu screen of this unit.**
See "Settings on the Menu Screen" on pages 25 and 26.

4 **Activate the EDIT function* if it is provided with the other unit.**

5 **Locate the playback start point and press the pause button on the other unit.**

6 **Slide REC in the direction of the arrow and press PAUSE ⏸ on this unit.**
This unit is now put in recording pause mode.



7 **Press the pause buttons (PAUSE ⏸ on this unit) on both units to release the pauses.**

8 **Press the pause buttons on both units to pause the units again.**

9 **Repeat steps 7 and 8 to edit more scenes.**

10 **After editing is completed, press the stop buttons (☐ on this unit) on both units to stop playback and recording.**

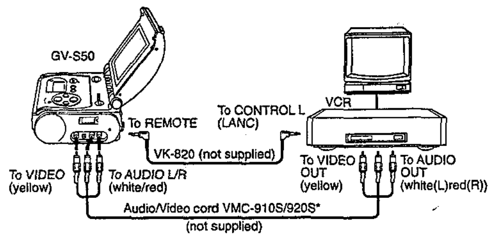
* Although this unit does not have an EDIT function, using this function on a VCR connected to this unit for editing will avoid deterioration of the picture on the duplicated tape.

Notes on connection
Note that cord plugs and jacks are color coded. Red plugs and jacks are for the right audio channel, white ones are for the left audio channel and yellow ones are for video signals.

Editing from the VCR Equipped with the CONTROL L (LANC Ⓛ) Terminal

Connect the REMOTE terminal on this unit and the CONTROL L terminal on the other unit, and then set the other unit's LANC mode to "M."
Playback/pause on the other unit and recording/pause on this unit can be operated simultaneously from the other unit by pressing only one button.

Connection


GV-S50
To REMOTE
To CONTROL L
(LANC)
VCR
VK-820 (not supplied)
To VIDEO
(yellow)
To AUDIO L/R
(white/red)
To VIDEO
OUT
(yellow)
To AUDIO
OUT
(white(L)red(R))
Audio/Video cord VMC-910S/920S*
(not supplied)

* If the other VCR is monaural type, use the VMC-910MS or VMC-920MS (not supplied).

Operation

1 **Turn on the power of both units.**

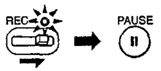
2 **Insert a source tape into the *other VCR (playback) and a tape for recording* into this unit (recording).**

3 **Select the tape speed ("SP" or "LP" from "REC MODE") on the menu screen of this unit.**
See "Settings on the Menu Screen" on pages 25 and 26.

4 **Activate the EDIT function if it is provided with the other VCR.**

5 **Locate the playback start point and press the pause button on the other VCR.**

6 **Slide REC in the direction of the arrow and press PAUSE II on this unit.**
This unit is now in recording pause mode.



7 **Press SYNCHRO EDIT on the other equipment to release the pause.**

8 **Press SYNCHRO EDIT on the other equipment to pause both units again.**

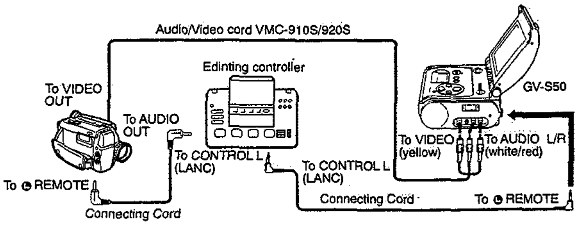
9 **Repeat steps 7 and 8 to edit other scenes.**

10 ***After editing is completed, press the stop buttons (□ on this unit) on both units to stop* playback and recording.**

About Ⓛ(LANC)
LANC stands for Local Application Control Bus System. The LANC terminal is used for controlling the tape transport of video equipment and peripherals connected to it. This terminal has the same function as those indicated as CONTROL L or REMOTE.

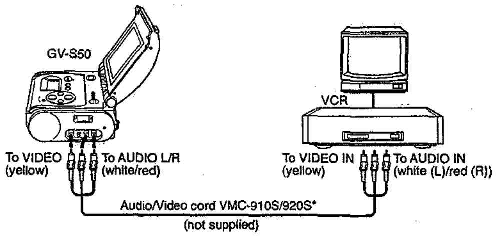
Editing with an Editing Controller

By adding an editing controller to the video equipment connected through the LANC terminals, the various piece of equipment can be operated with the controller.


Audio/Video cord VMC-910S/920S
Edinting controller
To VIDEO
OUT
To AUDIO
OUT
GV-S50
To CONTROL L
(LANC)
To CONTROL L
(LANC)
To VIDEO
(yellow)
To AUDIO L/R
(white/red)
To Ⓛ REMOTE
Connecting Cord
Connecting Cord
To Ⓛ REMOTE

Editing from This Unit to Another VCR

Connection


GV-S50
VCR
To VIDEO
(yellow)
To AUDIO L/R
(white/red)
To VIDEO IN
(yellow)
To AUDIO IN
(white (L)/red (R))
Audio/Video cord VMC-910S/920S*
(not supplied)

* If the other VCR is monaural type, use the VMC-910MS or VMC-920MS (not supplied).

Operation

1 ***Turn on the power of both units.***

2 **Insert a source tape into this unit (playback) and a tape for recording into the other VCR (recording).**

3 **Select the tape speed (SP/LP) on the other VCR.**

4 **Activate the EDIT function if it is provided with the other VCR.**

5 **Locate the playback start point and press PAUSE II on this unit.**

6 **Put the other VCR into recording pause mode**

7 **Press the pause buttons (PAUSE II on this unit) on both units to release the pause.**

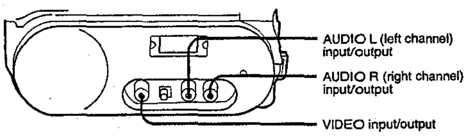
8 **Press the pause buttons on both units to pause the units again.**

9 **Repeat steps 7 and 8 to edit more scenes.**

10 **After editing is completed, press the stop buttons (□ on this unit) on both units to stop playback and recording.**

VIDEO/AUDIO Input/Output Jacks

The VIDEO/AUDIO input/output jacks automatically become either input or output jacks according to the operating modes of this unit.


AUDIO L (left channel)
input/output
AUDIO R (right channel)
input/output
VIDEO input/output

Relation between the operating mode and the input/output status

① When the LINE/TUNER selector on the TGV-3 is set to LINE or the TGV-3 is not installed.

Operating Mode	Input/Output Status
Stop	Input
Playback	Output
Recording	Input

② When the LINE/TUNER selector on the TGV-3 is set to TUNER (power is supplied).

Operating Mode	*Input/Output Status*
Stop	Output
Playback	Output
Recording	Output

The current status will appear on the screen for five seconds in the following cases:
- when the status has changed
- when you press DISPLAY

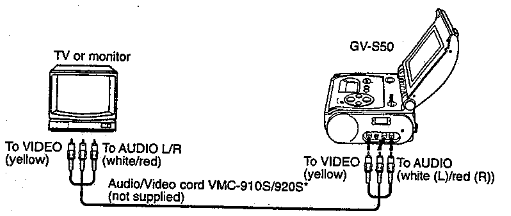
Connecting Other Video Equipment

You can connect other video equipment such as a TV, monitor, video camera recorder, VCR, etc. through the VIDEO/AUDIO input/output jacks.
For additional information, refer to the operating manuals of the equipment you want to connect.

Connecting a TV or Monitor

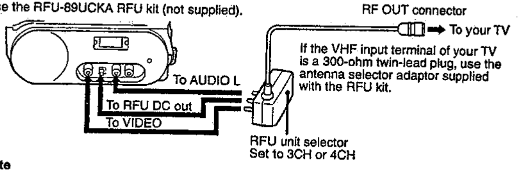
This allows you to view playback pictures on larger screen.

① TV or monitor with audio/video inputs



* If your TV or monitor is monaural type, use the VMC-910MS or VMC-920MS (not supplied).

③ TV without audio/video inputs
Use the RFU-89UCKA RFU kit (not supplied).



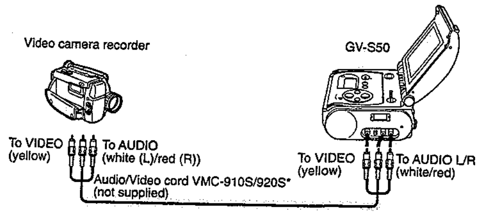
If the VHF input terminal of your TV is a 300-ohm twin-lead plug, use the antenna selector adaptor supplied with the RFU kit.

Note
The RFU 89UCKA includes the following accessories:
- RFU adaptor (1)
- Antenna selector (1)
- Antenna selector adaptor

To set the channel for this unit
To view the playback picture of this unit, set the selector of the RFU adaptor to channel 3 or 4, whichever channel is not active in your area, and select the same channel on the connected TV.

Connecting a Video Camera Recorder

This allows you to monitor the pictures actually being taken.



* If your camera recorder is monaural type, use the VMC-910MS or VMC-920MS (not supplied).

Connecting a VCR

This allows you to dub or edit tapes as explained before. See pages 30 – 35.

Other Information

Maintenance

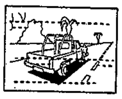
Main Unit

- When the unit is not used for a long period of time, periodically turn on the power and play back a tape for about three minutes.
- Clean the cabinet with a dry, soft cloth, or a soft cloth lightly moistened with a mild detergent solution. Do not use any type of solvent which may damage the finish.

Video Head Cleaning

To ensure a clear picture, clean the video heads periodically.
If playback pictures are noisy or hardly visible, the video heads may be contaminated. If this happens, clean the video heads with the Sony V8-25CLH cleaning cassette (not supplied) referring to the instructions supplied with it.

Caution
Do not use commercially available wet-type cleaning cassettes.
They may damage the video heads.



Note
If the V8-25CLH cleaning cassette is not available in your area, consult your Sony service facility.

Video Head Replacement
When playback pictures are not clear even after using the cleaning cassette, the video head may be damaged. If this happens, the video head needs to be replaced with a new one. Consult your Sony service facility for replacing the video head.

Built-in Lighting System

A built-in lighting system is installed inside the liquid crystal screen of this unit. Eventually the small fluorescent tube used for this built-in lighting system wears out. If the tube becomes dim or goes off immediately after you turn on the unit, even with new batteries, replace the tube with a new one. To replace the tube, consult the dealer where you purchased the unit, or a Sony service facility. The expected life of the small fluorescent tube is about three years if this unit is used for an hour each day. When you use this unit in a cold environment, the fluorescent tube will be dimmer at first. As soon as the temperature of the tube rises, it will regain its original brightness.

LCD

- Do not push the display forcibly.
- If the unit is used in a cold place, a residual image may appear on the screen. This is not a malfunction of the unit.
- Constant bright points of light (red, blue, or green) may appear on the screen. This is not a malfunction of the unit.

Moisture Condensation

If this unit is brought directly from a cold place to a warm place, moisture may condense inside the unit or on the surface of the tape. If this happens, the tape may stick to the head drum, damaging both the tape and the unit. Although this unit is furnished with a moisture sensor to prevent possible damage from condensation, it cannot prevent damage if a tape is left inside the unit. It is best to remove the tape if you are not using the unit.

If moisture condenses inside the unit
"DEW" appears on the screen.
No button will function except EJECT ⏏.
Eject the cassette, turn off the unit and leave the cassette holder open for at least an hour.
The unit can be used again if "DEW" does not appear when one of the tape transport buttons (▷, □, PAUSE ⏸, FF ▶▶ or REW ◀◀) is pressed.

Using Your Video Recorder/Monitor Abroad

If you prepare fully charged battery packs and the supplied AC power adaptor (which can be used in all areas with a local power supply ranging from 100 V – 240 V), you can use your video recorder/monitor in any country. However, since the shape of the outlet differs widely in the world, you may need an AC plug adaptor.
Each country has special TV color broadcast and electricity systems. This unit is designed to play back and record using the NTSC color video signals. Playback and recording of video sources of other color signals (PAL and SECAM) cannot be guaranteed.

Countries using NTSC color signal
Bahama Islands, Canada, Central America, Japan, Korea, Mexico, Taiwan, the Philippines, U.S.A., etc.

1-2. TGV-3

This section is extracted from TGV-3 instruction manual.

Note to CATV system Installer:
This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

Television programs, films, video tapes and other materials may be copyrighted. Unauthorized recording of such material may be contrary to the provisions of the copyright laws.

Precautions

Operation

- Should any solid object or liquid fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Avoid rough handling or mechanical shock to the unit.
- Do not wrap up the unit and operate it because heat may build up internally.
- Avoid using and storing the unit in the following locations:
  - –susceptible to vibration
  - –exposed to strong magnetic fields
  - –near TV or radio transmitters where strong radio waves are generated
  - –on the sand

Care

- Clean the unit body with a dry, soft cloth, or a soft cloth lightly moistened with a mild detergent solution. Do not use any type of solvent which may damage the finish.

Preliminary

Overview of the TGV-3

The TGV-3 is a tuner timer unit designed to be used with the GV-S50 8mm video recorder/monitor.

By connecting the GV-S50 8mm video recorder/monitor
- You can watch TV programs. (page 18)
- You can record TV programs. (page 24)

Features

- **Easy-to-use menu screen function**
- **Timer-activated recording**
- **SLEEP TIMER for turning off the unit automatically**

Menu Screen

The TGV-3 is equipped with a menu screen function. You can perform certain operations on the menu screen.
The TUNER MENU appears on the screen of the GV-S50 8mm video recorder/monitor when you press MENU. Select the desired item on the TUNER MENU screen. For more details, see reference pages in the table below.

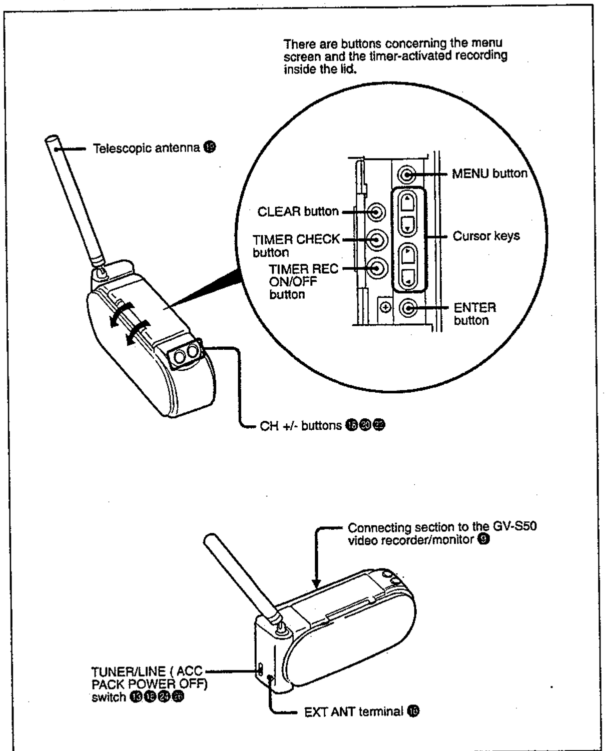
Menu screen

Menu item	Setting purpose	Reference page
TIMER SET	To preset timer-activated recordings	26 – 28
SLEEP TIMER	To turn off the unit automatically after a certain time	22
CHANNEL	To determine how to get a channel (DIRECT or SEEK)	20 – 21
CLOCK SET	To set the date and the time	11 – 12
TUNER PRESET	To preset TV channels	13 – 15

Note
The TUNER MENU does not appear while recording or playing back a tape on the GV-S50 video recorder/monitor.

Location of Parts and Controls

For details, refer to the pages indicated in circles.


There are buttons concerning the menu screen and the timer-activated recording inside the lid.
Telescopic antenna ⑱
MENU button
CLEAR button
TIMER CHECK button
Cursor keys
TIMER REC ON/OFF button
ENTER button
CH +/- buttons ⑱⑳㉒
Connecting section to the GV-S50 video recorder/monitor ⑨
TUNER/LINE (ACC PACK POWER OFF) switch ⑬⑱㉔㉕
EXT ANT terminal ⑱

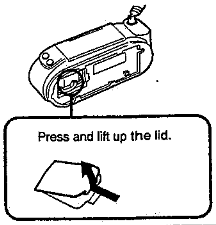
Getting Started

Power Sources

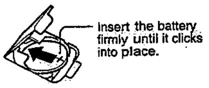
The TGV-3 automatically turns on and off when the GV-S50 video recorder/monitor turns on and off.
The power for this unit is supplied from the GV-S50 video recorder/monitor. You do not have to connect any power source to the TGV-3 itself except a lithium battery which powers the clock and keeps the last channel in memory when the GV-S50 video recorder/monitor turns off.

Installing a Lithium Battery

1 **Open the lid of the lithium battery compartment.**

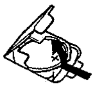

Press and lift up the lid.

2 **Install the supplied CR2032 lithium battery with the + side facing out.**


Insert the battery firmly until it clicks into place.

3 **Close the lid.**

To remove the lithium battery
Push the battery forward and remove it as illustrated.



Power Sources

Lithium battery life
Approximately one year in normal operation.
If the lithium battery becomes weak, the message "CLOCK SET" appears when you select the TIMER SET menu. But even though you select the CLOCK SET menu, the "12:00AM" indication appears and the clock does not operate.
In this case, replace the battery with a Sony CR2032 lithium battery. Use of another battery may present a risk of fire or explosion. After replacing the battery, readjust the clock.

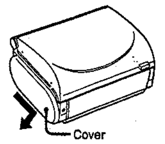
Cautions
- Keep the lithium battery out of the reach of children. Should the battery be swallowed, consult a doctor immediately.
- Before use, wipe the battery with a dry cloth to assure a good contact.
- Be sure to observe the correct polarity when installing the battery.
- Do not hold the battery with metallic tweezers, as that may cause short-circuit.
- Do not break up the battery or throw it into a fire because it may explode. Carefully dispose of the used batteries.

Warning
Battery may explode if mistreated. Do not recharge, disassemble or dispose of in fire.

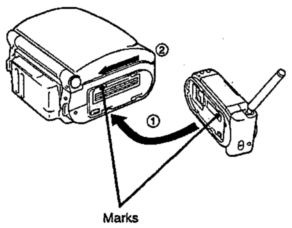
Connecting the GV-S50 Video Recorder/Monitor

Attaching the GV-S50 Video Recorder/Monitor

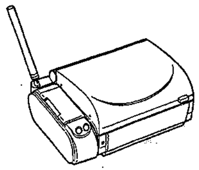
1 Remove the cover while sliding the RELEASE lever in the direction of the arrow (←).



2 Align the marks of the connecting sections of this unit and the GV-S50 as illustrated (①), then slide this unit backward until it clicks (②).

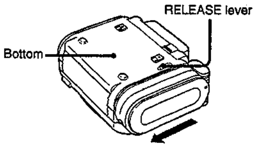


3



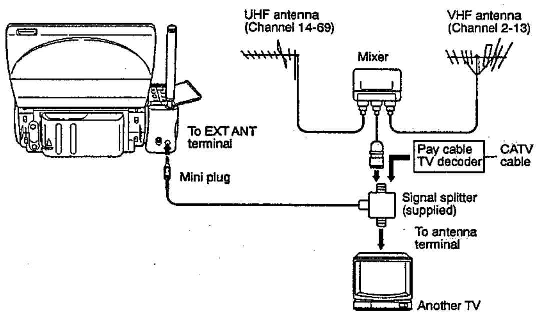
Note
When this unit is not connected to the GV-S50, be sure to attach the cover to the connecting section of the GV-S50 to prevent damage.

To remove the GV-S50 video recorder/monitor
Pull this unit forward while sliding the RELEASE lever in the direction of the arrow (←).


RELEASE lever
Bottom

Connecting an Outdoor Antenna and CATV cable

If you cannot obtain satisfactory reception with the telescopic antenna, or when recording TV programs, use an outdoor antenna. For viewing CATV channels, connect the CATV cable.

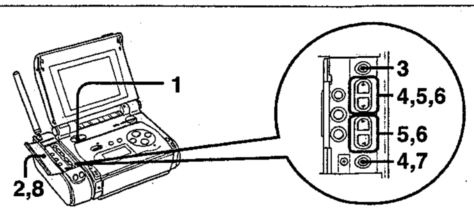

UHF antenna
(Channel 14-69)
VHF antenna
(Channel 2-13)
Mixer
To EXT ANT terminal
Mini plug
Pay cable TV decoder
CATV cable
Signal splitter (supplied)
To antenna terminal
Another TV

Note
- Before connecting the antennas, turn off the unit.
- Make connections firmly. A loose connection may cause a distorted picture.
- When using the unit in a car, use the optional VCA-3W or VCA-4E car antenna, etc. For details, refer to the operating instructions of the car antenna.

Setting the Clock

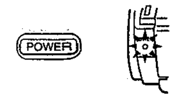
Before setting
Check the following points:
- Is the lithium battery installed correctly? (page 7)
- Is this unit connected to the GV-S50 video recorder/monitor? (page 9)
- Is the TUNER/LINE switch set to TUNER?

The built-in clock of this unit uses the 12-hour system.
0:00AM stands for midnight and 0:00PM for noon.

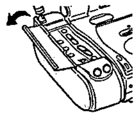

1
2,8
3
4,5,6
5,6
4,7

Example: Set to 1:15PM, July 4, 1992

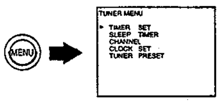
1 Press POWER of the GV-S50 video recorder/ monitor.
This unit turns on simultaneously.
The POWER lamp on the front panel of the GV-S50 lights up.



2 Open the lid.

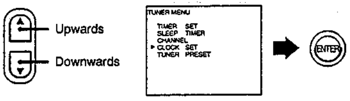


3 Press MENU.
The TUNER MENU display appears on the screen of the GV-S50.

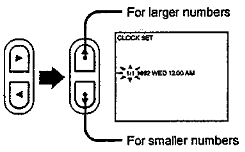

MENU
TUNER MENU
▸ TIMER SET
SLEEP TIMER
CHANNEL
CLOCK SET
TUNER PRESET

Setting the Clock

4 **Press ▲ or ▼ of the cursor keys to move the cursor (▶) down to CLOCK SET, and press ENTER.**

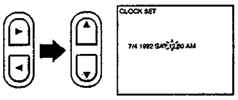

Upwards
Downwards
TUNER MENU
TIMER SET
SLEEP TIMER
CHANNEL
▶ CLOCK SET
TUNER PRESET
ENTER

5 **Set the month, day, and year in this order.***
Press ◀ or ▶ to make the item to be set flash, and press ▲ or ▼ until the desired number appears.


For larger numbers
CLOCK SET
1/1 1992 WED 12:00 AM
For smaller numbers

- The day of the week is automatically displayed.
- This unit incorporates the calendar until the year 2007.

6 **Set the hour and minute.**
Press ◀ or ▶ to make the item to be set flash, and press ▲ or ▼ until the desired number appears.
- Be sure to set AM and PM correctly.


CLOCK SET
7/4 1992 SAT 12:00 AM

7 **Press ENTER.**
The clock starts and the normal screen resumes.

8 **Close the lid.**

To reset the clock
Repeat steps 3 to 7.

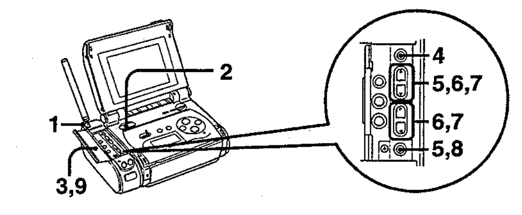
Note
If the lithium battery is not installed, the clock will be reset each time you disconnect the GV-S50 from this unit.

Watching TV Programs

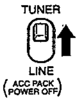
Presetting TV Channels

Presetting Channels

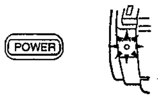
Receivable channels of this unit are:
VHF: 2–13
UHF: 14–69
CATV: 1 (A-8), 98 (A-2), 99 (A-1), 14–36 (A to W), 66–125 (W+30 to W+84).
This unit is preset at the factory to receive certain channels (see chart on page 15). If you want to receive other channels, you need to preset them. Up to 99 channels can be allocated to any desired program position.


1
2
3,9
4
5,6,7
6,7
5,8

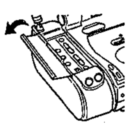
1 **Set the TUNER/LINE switch on the rear of this unit to TUNER.**


TUNER
LINE
(ACC PACK POWER OFF)

2 **Press POWER of the GV-S50 video recorder/monitor.**
This unit turns on simultaneously.
The POWER lamp on the front panel of the GV-S50 lights up.

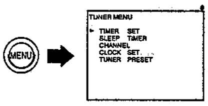


3 **Open the lid.**

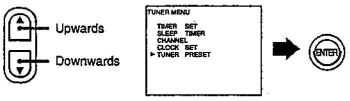


Presetting TV Channels

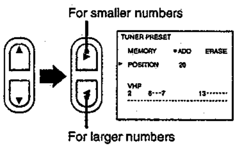
4 **Press MENU.**
The TUNER MENU display appears on the screen of the GV-S50.


MENU
TUNER MENU
▶ TIMER SET
SLEEP TIMER
CHANNEL
CLOCK SET
TUNER PRESET

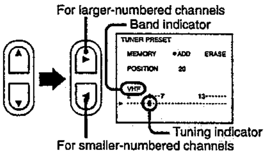
5 **Press ▲ or ▼ of the cursor keys to move the cursor (▶) down to TUNER PRESET, and press ENTER.**


Upwards
Downwards
TUNER MENU
TIMER SET
SLEEP TIMER
CHANNEL
CLOCK SET
▶ TUNER PRESET
ENTER

6 **Press ▲ or ▼ of the cursor keys to move the cursor (▶) down to POSITION, and press ◀ or ▶ to select the desired program position where the channel is to be stored.**


For smaller numbers
TUNER PRESET
MEMORY •ADD ERASE
▶ POSITION 20
VHF
2 6---7 13
For larger numbers

7 **Press ▲ or ▼ of the cursor keys to move the cursor (▶) down to the channel range display, and press ◀ or ▶ repeatedly until you get the desired channel.**
The UHF channel range is displayed after the VHF range.*
Repeat steps 6 and 7 for other channels to be preset.


For larger-numbered channels
Band indicator
TUNER PRESET
MEMORY •ADD ERASE
POSITION 20
VHF
7
13
Tuning indicator
For smaller-numbered channels

* After the channel range is displayed, wait for about two seconds before next operation.

8 **Press ENTER.**
Channel presetting is completed. The on-screen display disappears.

9 **Close the lid.**

To change the order of the channels to be stored
Follow the above steps.

Preset channels

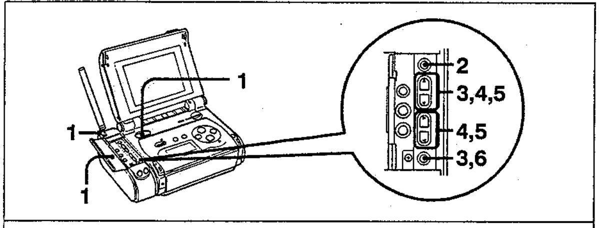
Program position	1	2–13	14–36	37	38–60	61	62–97	98	99
Corresponding channel	CATV 1	VHF 2–13	CATV 14–36	*	—	*	—	CATV 98	CATV 99
Number displayed	1	2–13	14–36	37	—	61	—	98	99

* UHF channels are preset around this number.
— Channels are not preset.

Presetting TV Channels

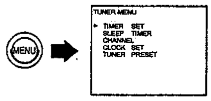
Erasing Program Positions

The erased program position is skipped when you press CH +/–.

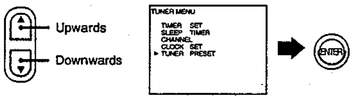

1
1
1
2
3,4,5
4,5
3,6

1 **Proceed steps 1 to 3 of "Presetting Channels" on page 13.**

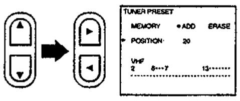
2 **Press MENU.**
The TUNER MENU display appears on the screen of the GV-S50.


MENU
TUNER MENU
▸ TIMER SET
SLEEP TIMER
CHANNEL
CLOCK SET
TUNER PRESET

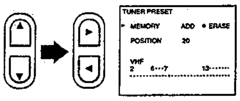
3 **Press ▲ or ▼ of the cursor keys to move the cursor (▸) down to TUNER PRESET, and press ENTER.**


Upwards
Downwards
TUNER MENU
TIMER SET
SLEEP TIMER
CHANNEL
CLOCK SET
▸ TUNER PRESET
ENTER

4 **Press ▲ or ▼ of the cursor keys to move the cursor (▸) down to POSITION, and press ◀ or ▶ to select the program position to be skipped.**


TUNER PRESET
MEMORY • ADD ERASE
▸ POSITION 20
VHF
2 6···7 13·······

5 **Press ▲ or ▼ of the cursor keys to move the cursor (▸) down to MEMORY, and press ◀ or ▶ to select ERASE.**
Repeat steps 4 and 5 for other program positions to be skipped.


TUNER PRESET
▸ MEMORY ADD • ERASE
POSITION 20
VHF
2 6···7 13·······

6 **Press ENTER.**
The on-screen display disappears.

To add the erased channels again

See "Presetting Channels" on page 13.

Channel Allocation Chart

Frequency (MHz)	50	100	150	200	250	300	400	500	600	700	800
VHF/UHF channels	VHF 2-6			VHF 7-13				UHF 14-69			
CATV channels	A-8 A-6	A-2~1			J-W			W + 30-W + 84			
Band indicator	VHF							UHF			

When you press CH +, the above channel will be scanned from the lowest frequency to the highest in sequence. By pressing CH –, the channels will be scanned in reverse.

Cable TV Channel Chart*

Cable TV systems use letters or numbers to designate channels. To tune in a channel, refer to this chart. Check with your local cable TV company for more complete information on the available channels.

Number on this unit	1	98	99	14	15	16	17	18	19	20	21	22
Corrsponding CATV channel	A-8	A-2	A-1	A	B	C	D	E	F	G	H	I

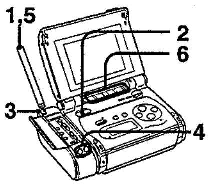
23	24	25	26	27	28	29	30	31	32	33	34	35	36 ....
J	K	L	M	N	O	P	Q	R	S	T	U	V	W W+30.........W+84

* The designation of the cable TV channels conforms to the EIA/NCTA recommendation.

Note
Pay cable TV systems use scrambled or encoded signals and require special converters (decoders) besides the normal cable connections.

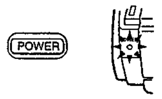
Watching TV Programs

Viewing a Preset TV Program

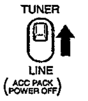


1 **Pull out the telescopic antenna fully.**
Be sure to pull out the base of the telescopic antenna.
If you have connected an external antenna or CATV cables, be sure to fold in the telescopic antenna.

2 **Press POWER of the GV-S50 video recorder/monitor.**
This unit turns on simultaneously.
The POWER lamp on the front panel of the GV-S50 lights up.

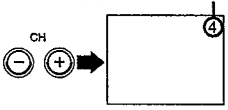


3 **Set the TUNER/LINE switch to TUNER, if a TV program is not displayed.**

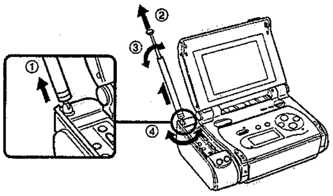

TUNER
LINE
(ACC PACK / POWER OFF)

4 **Select the desired program.**
Press CH + for higher-numbered programs and CH – for lower-numbered programs. The programs appear in numerical sequence. Press CH +/– repeatedly until you get the desired program on the screen.

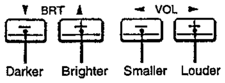
The program position is displayed for a few seconds.



5 **Adjust the telescopic antenna for the best reception.**

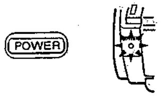


6 **Adjust the volume and brightness.**
Press BRT +/– and VOL +/– on the GV-S50 video recorder/monitor.


▼ BRT ▲
◀ VOL ▶
Darker
Brighter
Smaller
Louder

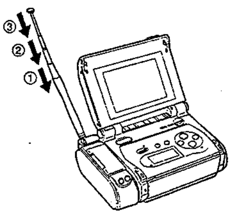
To turn off the TV

Press POWER of the GV-S50 video recorder/monitor.
The POWER lamp on the front panel of the GV-S50 goes out.



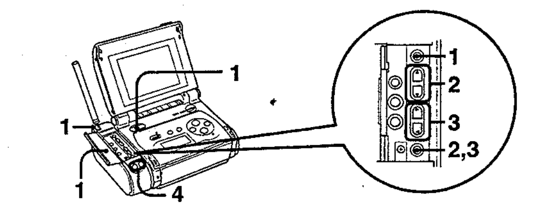
To pull the telescopic antenna away

Slide in the base of the telescopic antenna first, then the center and the point.



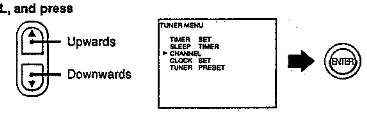
Viewing a TV Program Without Presetting Channels

When you do not know the channel number of the TV program you wish to view or if you want to use this unit in a moving car, search for the program as follows.

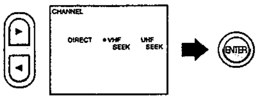


1 **Proceed steps 1 to 4 of "Presetting Channels" on page 13.**

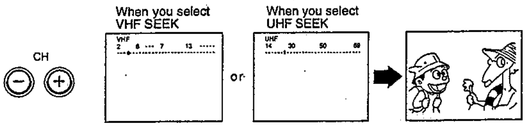
2 **Press ▲ or ▼ of the cursor keys to move the cursor (▶) down to CHANNEL, and press ENTER.**


Upwards
Downwards
TUNER MENU
TIMER SET
SLEEP TIMER
▶ CHANNEL
CLOCK SET
TUNER PRESET
ENTER

3 **Press ◀ or ▶ of the cursor keys to select VHF SEEK or UHF SEEK, and press ENTER.**


CHANNEL
DIRECT
● VHF SEEK
UHF SEEK
ENTER

4 **Press CH +/– buttons to select the channel.**
Press the buttons repeatedly until you get the desired program on the screen.


When you select VHF SEEK
When you select UHF SEEK
CH
VHF
2 6 ··· 7 13 ·····
UHF
14 30 50 69
or

After selecting the channel, the channel range display goes out after a few seconds.

"Last channel" memory function

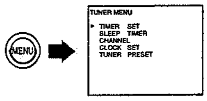
- While you are watching TV programs, if the power source is disconnected or the battery pack becomes exhausted, the unit turns off with the last channel being memorized.
  When you turn on the unit again, the last channel appears on the screen. The lithium battery must be installed for this function.
- The last channel memory function also works when the TV signal is cut off, for example, when you go through a tunnel in a moving car.
- If the lithium battery becomes exhausted but the power source is connected, the last channel memory function will still operate.

Using the SLEEP TIMER

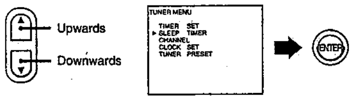
You can set the unit to turn off automatically after a certain amount of time, after as short as 30 minutes or as long as 5 hours, while viewing a TV program, tape playback, or while recording.

Example: To turn off the TV after 2 hours

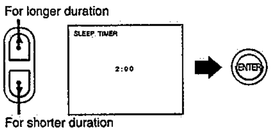
1 **Press MENU.**
The TUNER MENU display appears on the screen of the GV-S50.


MENU
TUNER MENU
▶ TIMER SET
SLEEP TIMER
CHANNEL
CLOCK SET
TUNER PRESET

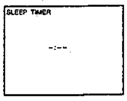
2 **Press ▲ or ▼ of the cursor keys to move the cursor (▶) down to SLEEP TIMER, and press ENTER.**


Upwards
Downwards
TUNER MENU
TIMER SET
▶ SLEEP TIMER
CHANNEL
CLOCK SET
TUNER PRESET
ENTER

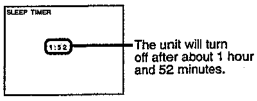
3 **Press ▲ or ▼ of the cursor keys to select the desired time interval, and press ENTER.**
The TV will be turned off automatically after 2 hours.
The procedure is the same for tape playback and recording. The tape will stop running after the selected time interval.
The interval changes up to 5 hours in steps of 30 minutes.


For longer duration
For shorter duration
SLEEP TIMER
2:00
ENTER

To cancel the SLEEP TIMER
Press POWER of the GV-S50 to turn off the power of the video recorder/monitor.
(Even while playing back or recording a tape, you can cancel the SLEEP TIMER by turning off the power of the video recorder/monitor.)


SLEEP TIMER
-:--

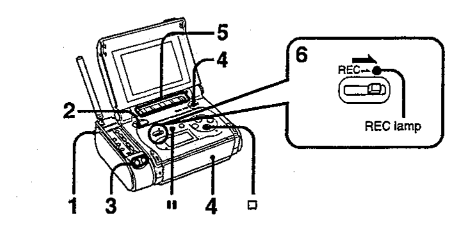
To check the remaining time
Select SLEEP TIMER in the TUNER MENU display, and press ENTER.
The remaining time is displayed.
(You cannot check the remaining time while playing back or recording a tape).


SLEEP TIMER
1:52
The unit will turn off after about 1 hour and 52 minutes.

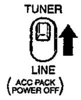
Note
When you use the unit with rechargeable batteries on the GV-S50, the unit may turn off before the selected time because the batteries are exhausted.

Recording TV Programs

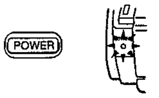
You can record a TV program while viewing it. For better picture and sound quality, connecting an external antenna is recommended.


5
4
2
6
REC
REC lamp
1
3
II
4
□

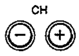
1 **Set the TUNER/LINE switch on the rear of this unit to TUNER.**


TUNER
LINE
(ACC PACK POWER OFF)

2 **Press POWER of the GV-S50 video recorder/monitor.**
This unit turns on simultaneously.
The POWER lamp on the front panel of the GV-S50 lights up.



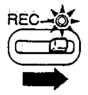
3 **Select the desired TV channel.**



4 **Insert a cassette.**

5 **Select the recording mode, SP or LP.**
Refer to the operating instructions supplied with the GV-S50 video recorder/monitor.
The recording time of a cassette in the LP mode is twice as long as that in the SP mode. For better picture and sound quality, select the SP mode.

6 **Slide REC to the right.**
The REC lamp lights and the recording starts.



To stop recording for a moment
Press **II**.

To resume recording
Press **II** again. (If **II** is not pressed again for about 5 minutes, the pause mode will be released automatically and the GV-S50 will stop. This is to protect the video heads.)

To stop recording
Press □.

When the tape is recorded to the end

The tape stops automatically, but the unit is not turned off. If you are not going to continue operation, turn off the power of the GV-S50.

About the recorded sound

The VOL control setting has no effect on the recording level.

To change the channel during recording

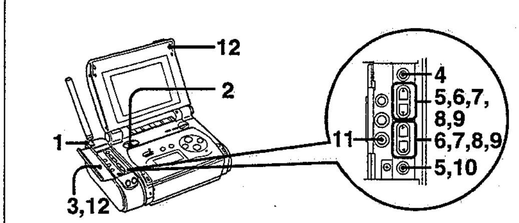
Set the unit in the recording pause mode and then select another channel. You cannot watch another program while recording.

Timer-Activated Recording

By using the timer-activated recording feature, you can preset the GV-S50 to record up to six TV programs within a one-month period.
For better picture and sound quality, connecting an external antenna is recommended.

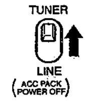
Before setting the timer

- Is the GV-S50 correctly connected to this unit? (See page 9.)
- Make sure that the power is supplied. (Is the battery pack on the GV-S50 fully charged? For long recording, use of the AC power source is recommended.)
- Set the clock correctly. (See page 11.) If the clock is not set, the message "CLOCK SET" appears on the screen.
- Insert a tape correctly. Make sure that the safety tab is slid in. (Refer to the operating instructions of the GV-S50.)
- Note that you cannot set the timer while playing back or recording a tape on the GV-S50.

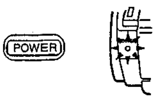

12
2
1
3,12
11
4
5,6,7,
8,9
6,7,8,9
5,10

Example: To record a broadcast on program position 6, from 8:00PM to 8:45PM on Saturday, July 4, 1992, in SP mode

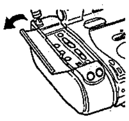
1 **Set the TUNER/LINE switch on the rear of this unit to TUNER.**


TUNER
LINE
(ACC PACK POWER OFF)

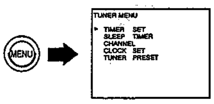
2 **Press POWER of the GV-S50 video recorder/monitor.**
This unit turns on simultaneously.
The POWER lamp on the front panel of the GV-S50 lights up.



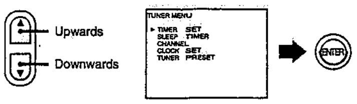
3 **Open the lid.**



4 **Press MENU.**
The TUNER MENU display appears on the screen of the GV-S50.

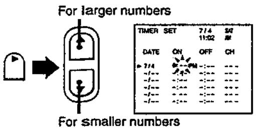

MENU
TUNER MENU
▶ TIMER SET
SLEEP TIMER
CHANNEL
CLOCK SET
TUNER PRESET

5 **Press ▲ or ▼ of the cursor keys to move the cursor (▶) down to TIMER SET, and press ENTER.**

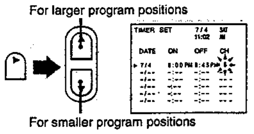

Upwards
Downwards
TUNER MENU
▶ TIMER SET
SLEEP TIMER
CHANNEL
CLOCK SET
TUNER PRESET
ENTER

6 **Set the date, starting time, and ending time.**
Press ▶ of the cursor keys to make the item to be changed flash, and press ▲ or ▼ until the desired date or time appears. (Be sure to set AM and PM correctly.)

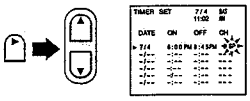
To change an item which is already set
Press ◀ or ▶ of the cursor keys to make the item to be changed flash, and press ▲ or ▼ to change it.


For larger numbers
For smaller numbers
TIMER SET 7/4 SAT
11:02 AM
DATE ON OFF CH
▶ 7/4 8:--PM -:-- ---

7 **Select the program to be recorded.**
Press ▲ or ▼ until the desired program position appears.


For larger program positions
TIMER SET 7/4 SAT 11:02 AM
DATE ON OFF CH
For smaller program positions

8 **Select the tape speed.**
Press ▲ or ▼ to select SP or LP.



9 **Press ▶ to store the setting.**
If you want preset another program, press ▼ to move the cursor (▶) to the next line and repeat steps 6 to 9.

10 **Press ENTER, or make sure that the cursor (▶) is at the beginning of a line.**

11 **Press TIMER REC ON/OFF.**
The TIMER REC lamp lights up and the GV-S50 turns off.

TIMER REC ON/OFF
TIMER REC

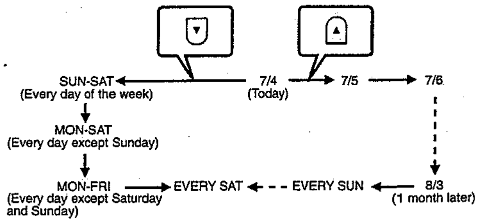
12 **Close the lid of this unit and the LCD of the GV-S50.**
The recording starts automatically at the preset starting time and the power goes off at the preset ending time.

To stop the timer recording

Press the TIMER REC ON/OFF again.
The TIMER REC lamp goes out and the tape stops.

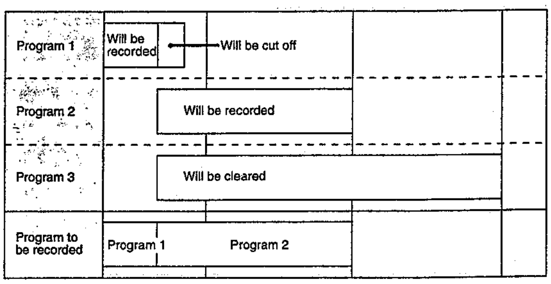
Every Week Recording and Every Day Recording

You can preset to record the same program every day or the same program on a specific day of every week.
When you set the date, press ▲ or ▼, and the indication will change as follows:
For every week recording or every day recording, press ▼ to set the date quickly.



When the presettings of timer recordings overlap

Example



Program 1: The recording will stop before the program finishes.
Program 2: The program will be recorded completely.
Program 3: The presetting will be canceled.

- **If the starting time of one program comes before the recording of the other program is finished**
  The recording of program 2 begins before program 1 is finished.
- **If the starting time of two programs are the same**
  The program which is preset on the upper line in the TIMER SET display will be recorded and the other program will be cancelled.

Note
If the starting time of the second program is the same as the ending time of the first program, the last 20 seconds of the first program will not be recorded.

While playing back or recording a tape

You cannot set the timer. Set the timer after stopping the tape.

During timer recording standby mode

No buttons other than TIMER REC ON/OFF and TIMER CHECK are operable.

During timer recording

If you want to watch the picture, open the LCD.

To record to the end of the tape

Set the starting and ending time the same. When the tape reaches the end, recording will stop and the power goes off.

If you detach this unit from the video recorder/monitor during timer recording or timer recording standby mode

The timer settings will be canceled even if you attach this unit to the video recorder/monitor again.

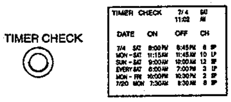
If a power interruption occurs or the power is disconnected when using the video recorder/monitor with the AC power source

- **During timer recording**
  Timer recording stops. Even if the power is resupplied, recording does not resume.
- **During timer recording standby mode**
  Even if the power is resupplied, the timer function does not work.
  Press TIMER REC ON/OFF again to resume the timer function.

Checking the Contents of Preset Timer Setting

When the unit is in timer recording standby mode or in stop mode

Press TIMER CHECK. The TIMER CHECK display showing the preset timer settings will appear on the screen. If the unit is turned off, turn on the unit, then press TIMER CHECK. The TIMER CHECK display will appear.



```
TIMER  CHECK      7/4   SAT
                  11:02 AM
DATE      ON       OFF      CH
7/4  SAT  8:00PM   8:45PM   8  SP
MON-SAT   11:15AM  11:45AM  10 LP
SUN-SAT   9:00AM   10:00AM  12 SP
EVERY SAT 6:00AM   7:00PM   3  LP
MON-FRI   10:00PM  10:30PM  2  SP
7/20 MON  7:30AM   8:30AM   8  SP
```

To turn off the TIMER CHECK display, press TIMER CHECK again.

Note
You cannot check the contents of timer settings while the timer recording is being executed.

Changing the Timer Settings

When the unit is in timer recording standby mode

1. Release the timer recording standby mode by pressing TIMER REC ON/OFF.
2. Turn on the GV-S50.
3. Preset timer again. (See the procedures on pages 26 to 28.)

Note
You cannot change the timer settings while the timer recording is being executed.

Canceling the Timer Settings

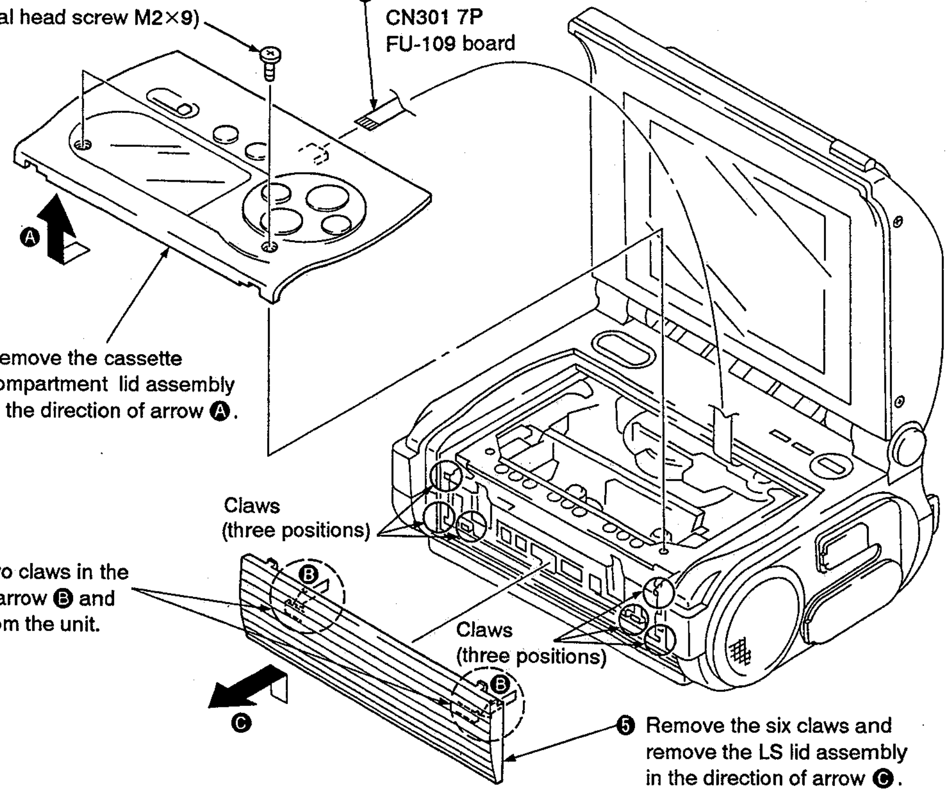
Release the timer recording standby mode by pressing TIMER REC ON/OFF.
Turn on the GV-S50 and select TIMER SET in the TUNER MENU display. In the TIMER SET display, press ▲ or ▼ of the cursor keys to move the cursor (▶) to the setting to be cleared and press CLEAR. The setting will be cleared and "–/–– –:–– –:–– –– –" indication resumes.

Operating the Unit After Setting the Timer

1. Press TIMER REC ON/OFF.
   The TIMER REC lamp goes off.
2. Operate the unit.
3. After using it, press TIMER REC ON/OFF to turn on the TIMER REC lamp. The unit turns off and enters timer recording standby mode.

SECTION 2
DISASSEMBLY

2-1. REMOVAL OF CASSETTE COMPARTMENT LID ASSEMBLY AND LS LID ASSEMBLY



❶ Two screws (special head screw M2×9)

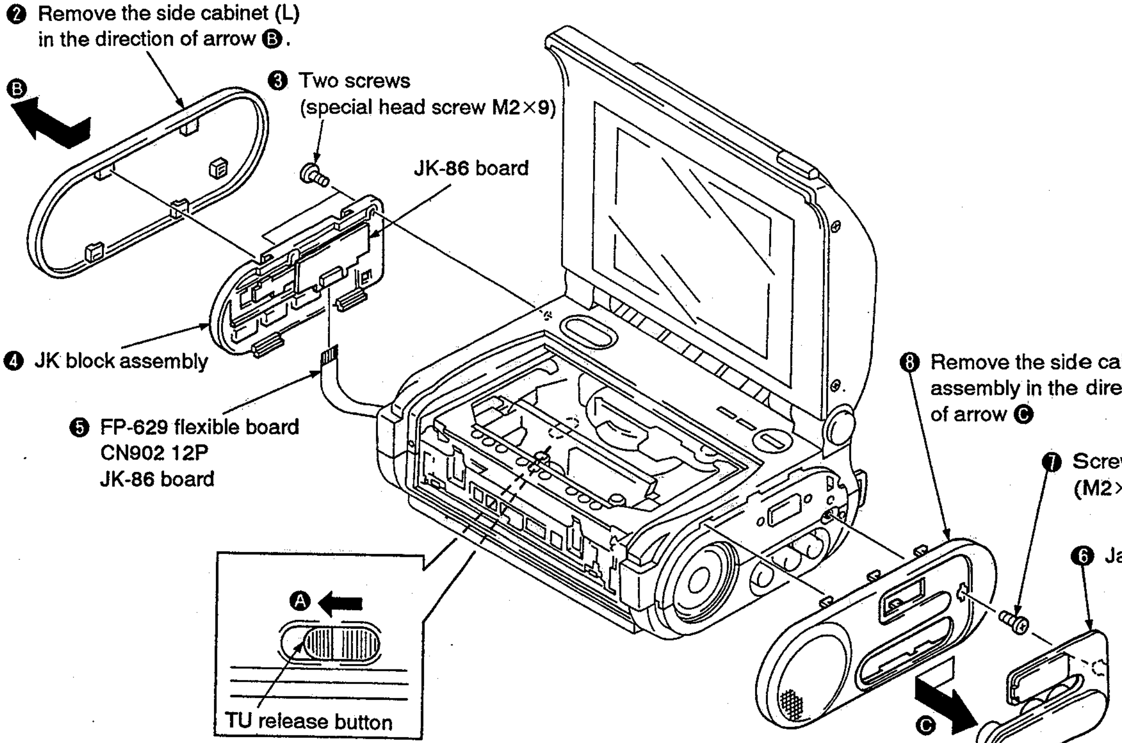
❷ Remove the cassette compartment lid assembly in the direction of arrow Ⓐ.

❸ FP-565 flexible board CN301 7P FU-109 board

❹ Press the two claws in the direction of arrow Ⓑ and remove it from the unit.

❺ Remove the six claws and remove the LS lid assembly in the direction of arrow Ⓒ.

2-2. REMOVAL OF SIDE CABINETS (L, R) AND JK BLOCK ASSEMBLIES (JK-86 BOARD)



❶ Slide the TU release button in the direction of arrow Ⓐ.

❷ Remove the side cabinet (L) in the direction of arrow Ⓑ.

❸ Two screws (special head screw M2×9)

❹ JK block assembly

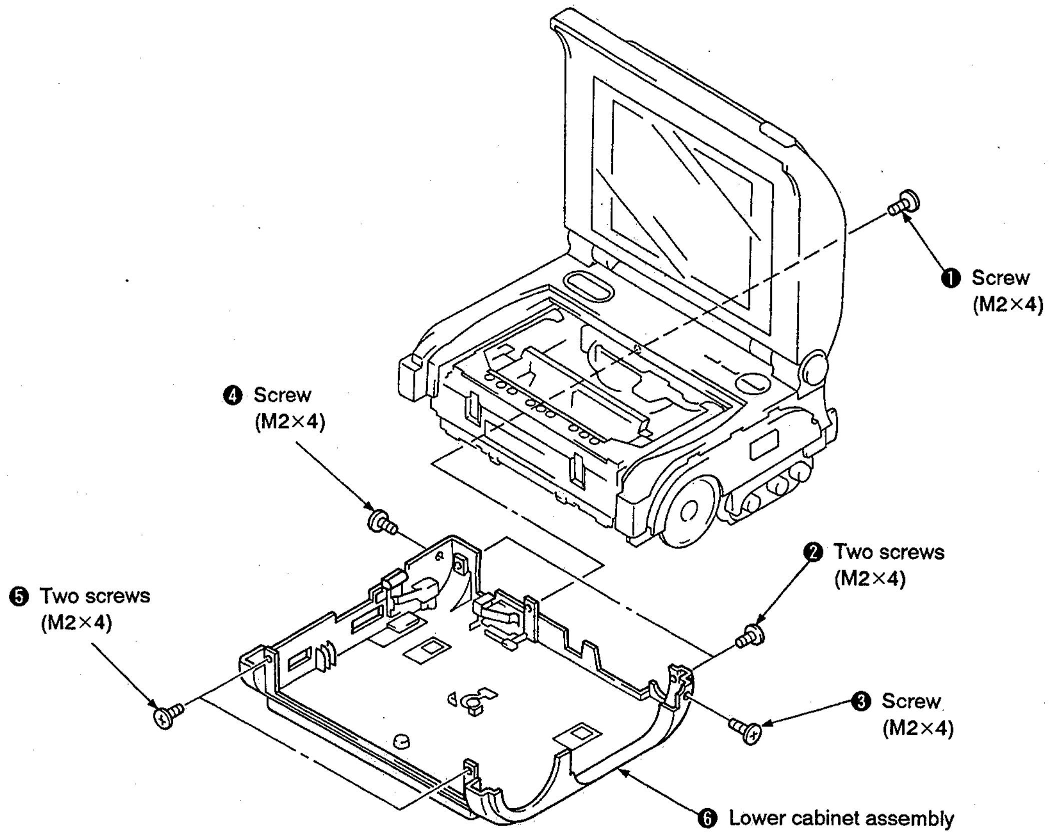
❺ FP-629 flexible board CN902 12P JK-86 board

❻ Jack cover

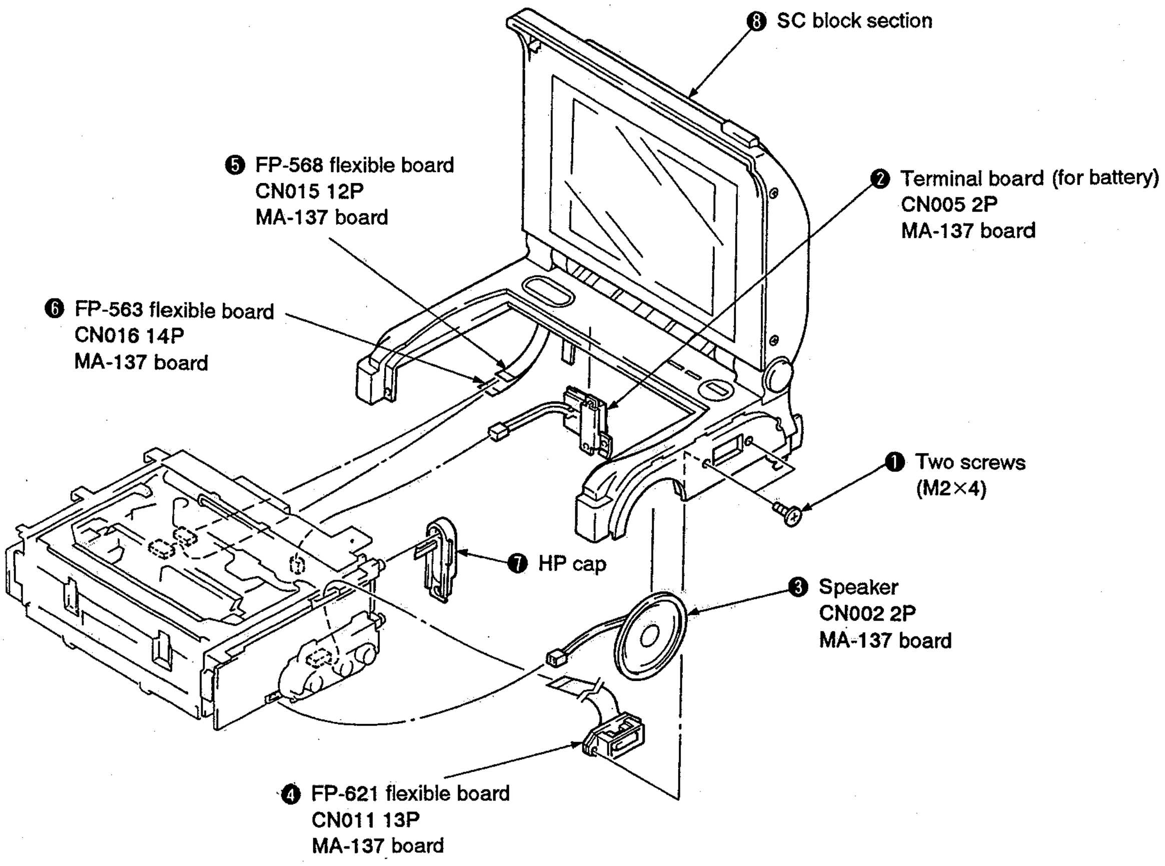
❼ Screw (M2×4)

❽ Remove the side cabinet (R) assembly in the direction of arrow Ⓒ

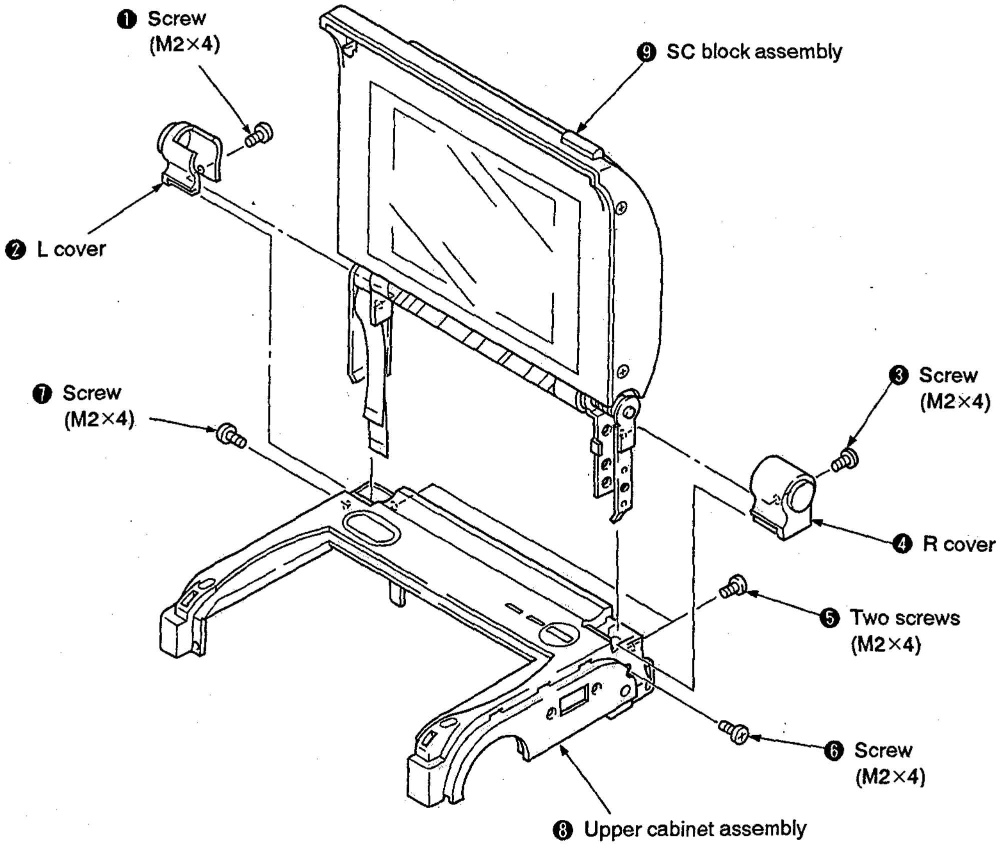
2-3. REMOVAL OF LOWER CABINET ASSEMBLY


❶ Screw
(M2×4)
❹ Screw
(M2×4)
❷ Two screws
(M2×4)
❺ Two screws
(M2×4)
❸ Screw
(M2×4)
❻ Lower cabinet assembly

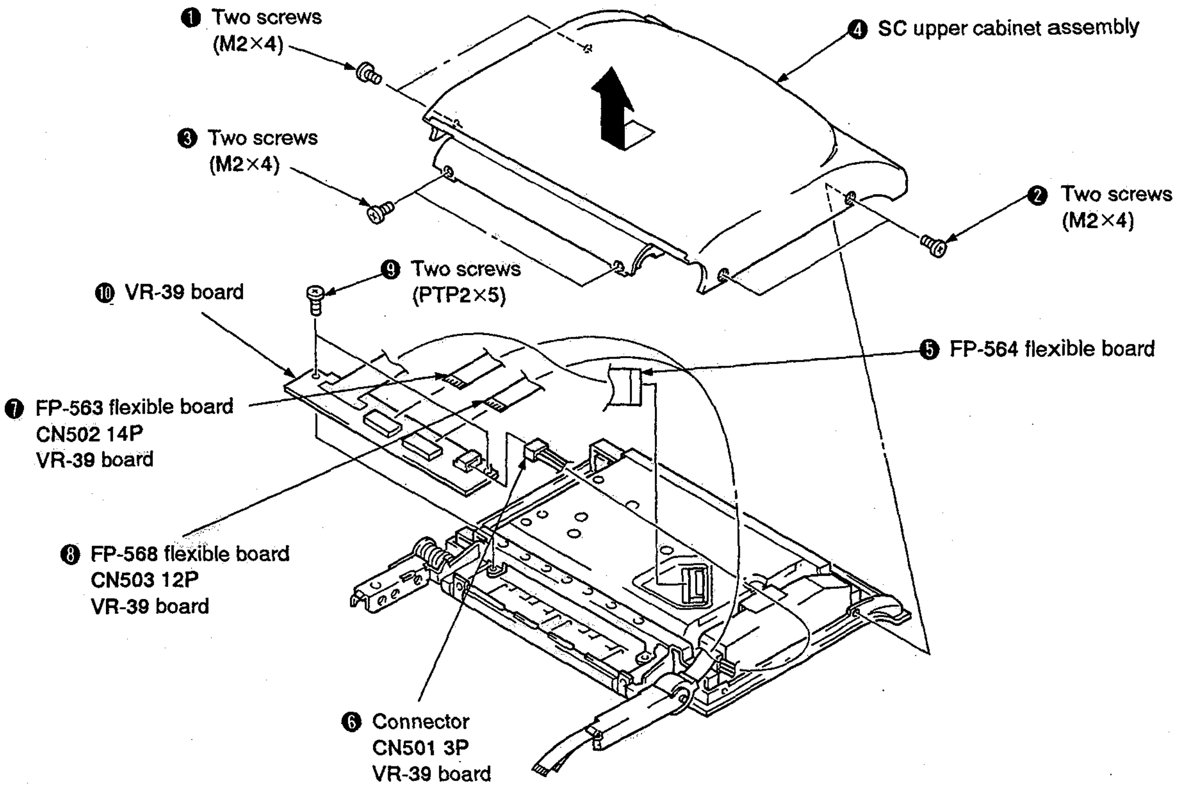
2-4. REMOVAL OF SC BLOCK SECTION


❽ SC block section
❺ FP-568 flexible board
CN015 12P
MA-137 board
❷ Terminal board (for battery)
CN005 2P
MA-137 board
❻ FP-563 flexible board
CN016 14P
MA-137 board
❶ Two screws
(M2×4)
❼ HP cap
❸ Speaker
CN002 2P
MA-137 board
❹ FP-621 flexible board
CN011 13P
MA-137 board

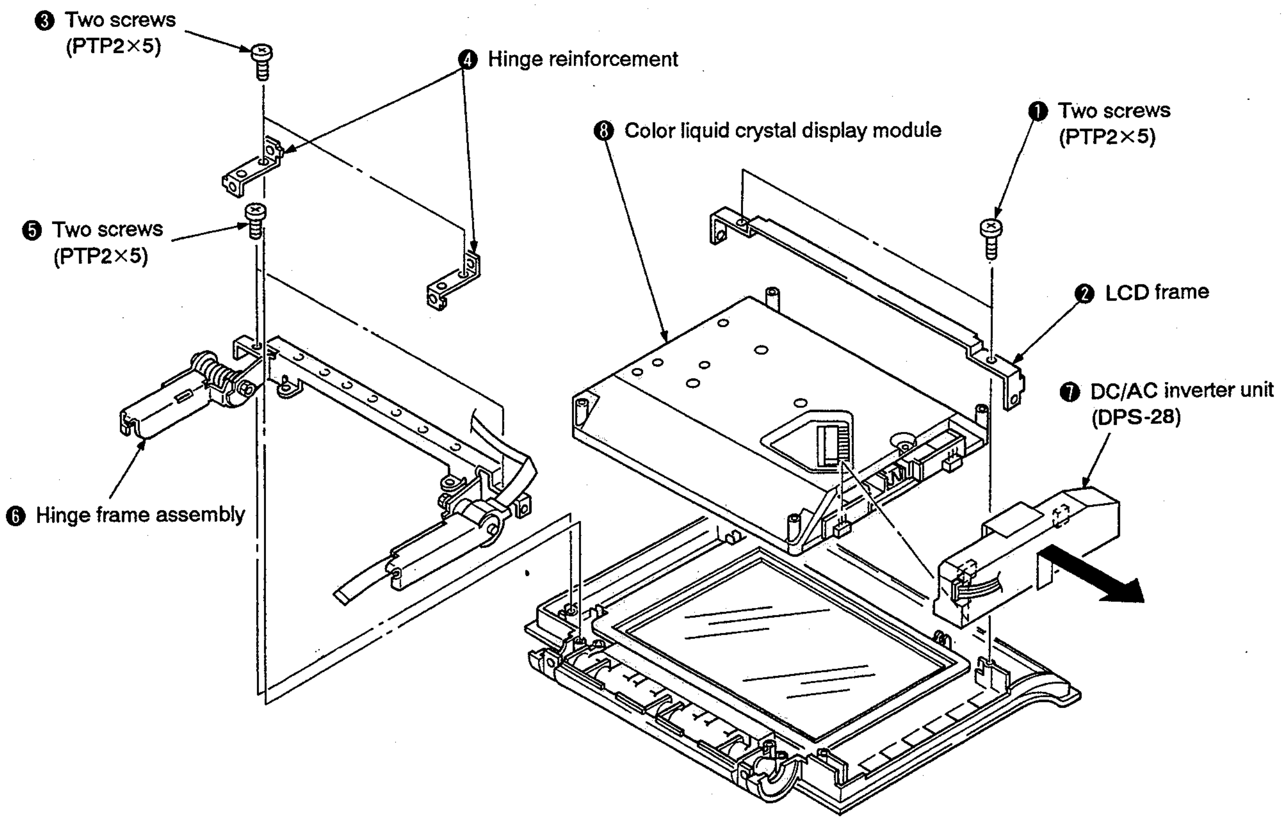
2-5. REMOVAL OF SC BLOCK ASSEMBLY


❶ Screw (M2×4)
❾ SC block assembly
❷ L cover
❸ Screw (M2×4)
❼ Screw (M2×4)
❹ R cover
❺ Two screws (M2×4)
❻ Screw (M2×4)
❽ Upper cabinet assembly

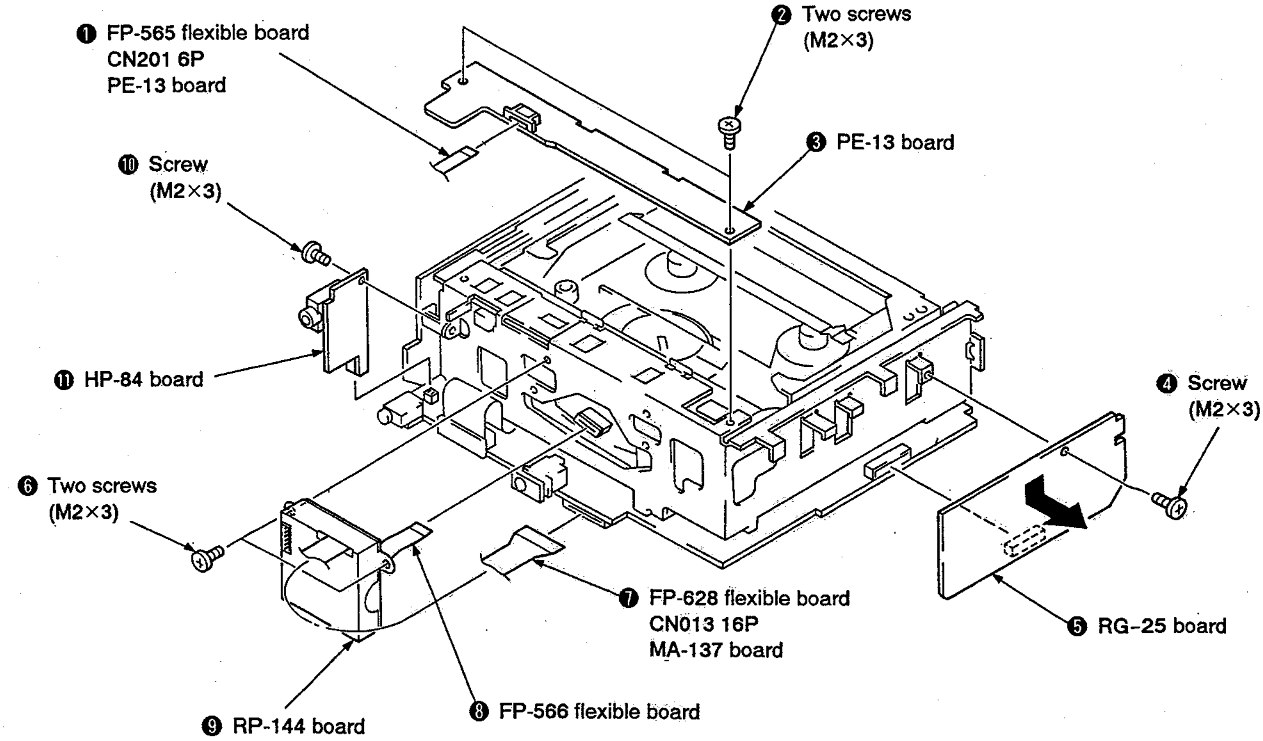
2-6. REMOVAL OF VR-39 BOARD


❶ Two screws (M2×4)
❹ SC upper cabinet assembly
❸ Two screws (M2×4)
❷ Two screws (M2×4)
❿ VR-39 board
❾ Two screws (PTP2×5)
❺ FP-564 flexible board
❼ FP-563 flexible board CN502 14P VR-39 board
❽ FP-568 flexible board CN503 12P VR-39 board
❻ Connector CN501 3P VR-39 board

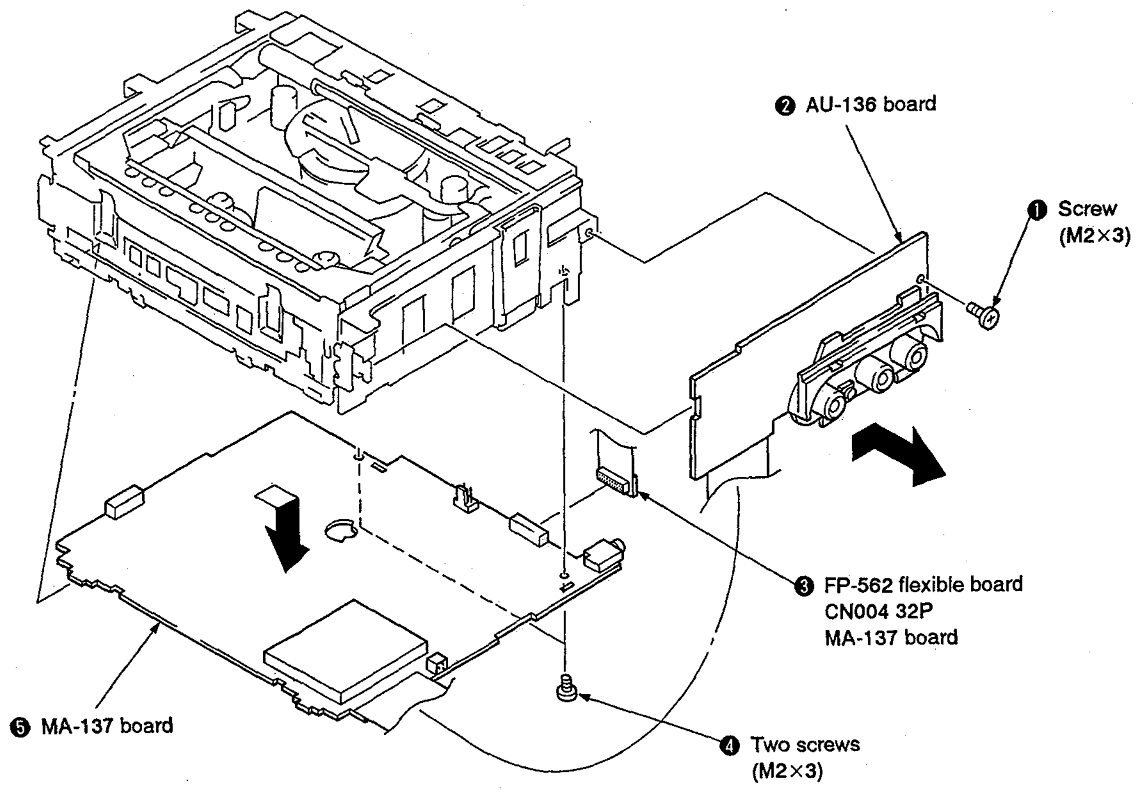
2-7. REMOVAL OF COLOR LIQUID CRYSTAL DISPLAY MODULE


❸ Two screws (PTP2×5)
❹ Hinge reinforcement
❽ Color liquid crystal display module
❶ Two screws (PTP2×5)
❺ Two screws (PTP2×5)
❷ LCD frame
❼ DC/AC inverter unit (DPS-28)
❻ Hinge frame assembly

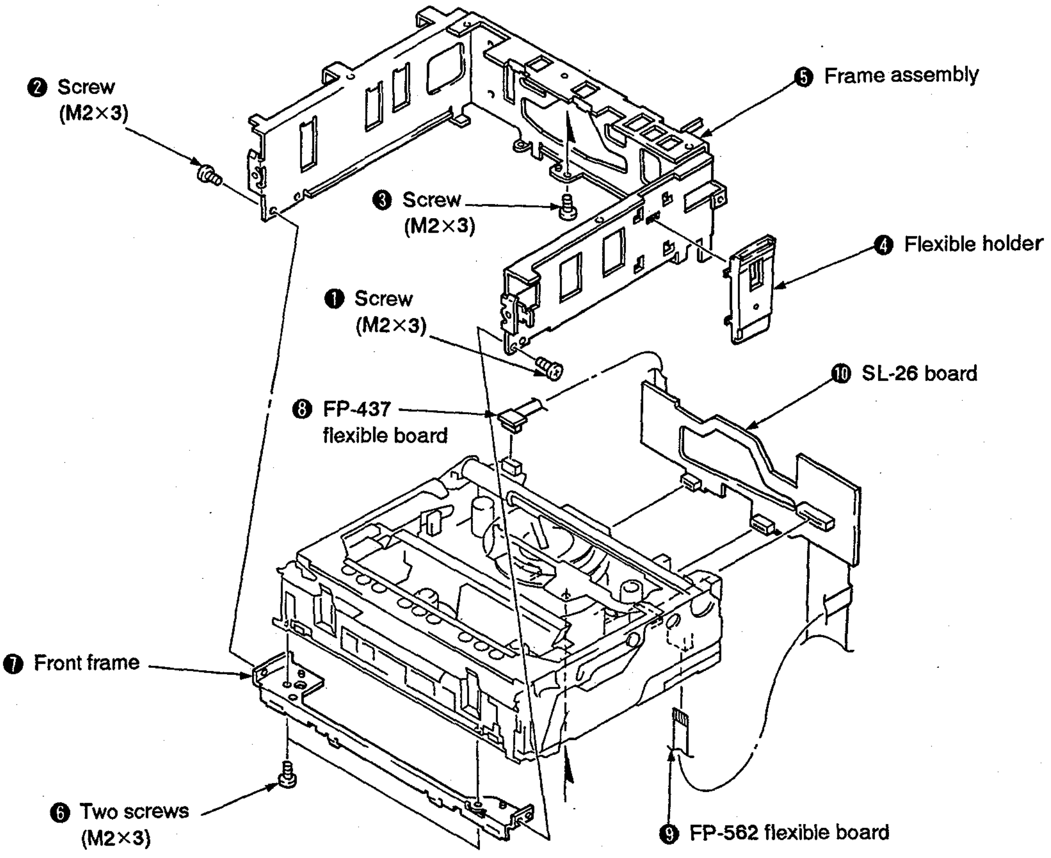
2-8. REMOVAL OF PE-13, RG-25, RP-144, HP-84 BOARDS


❶ FP-565 flexible board CN201 6P PE-13 board
❷ Two screws (M2×3)
❸ PE-13 board
❿ Screw (M2×3)
⓫ HP-84 board
❹ Screw (M2×3)
❻ Two screws (M2×3)
❼ FP-628 flexible board CN013 16P MA-137 board
❺ RG-25 board
❾ RP-144 board
❽ FP-566 flexible board

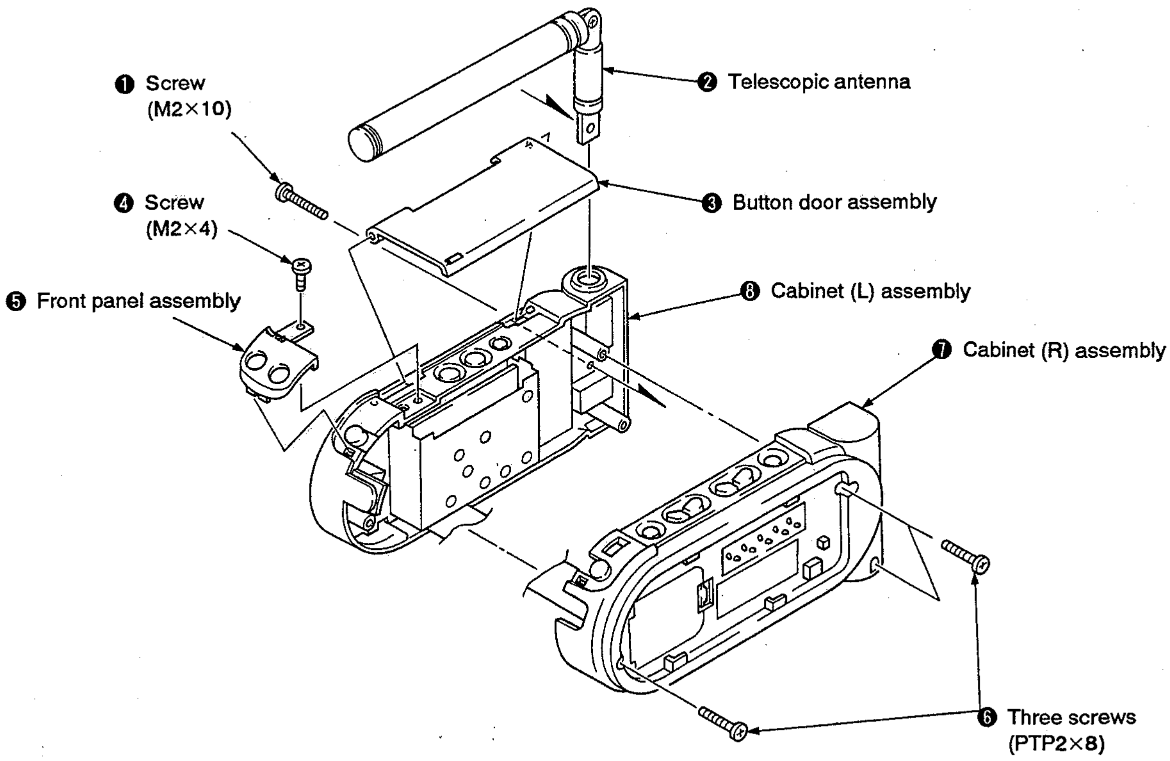
2-9. REMOVAL OF AU-136 AND MA-137 BOARDS


❷ AU-136 board
❶ Screw (M2×3)
❸ FP-562 flexible board CN004 32P MA-137 board
❺ MA-137 board
❹ Two screws (M2×3)

2-10. REMOVAL OF SL-26 BOARD

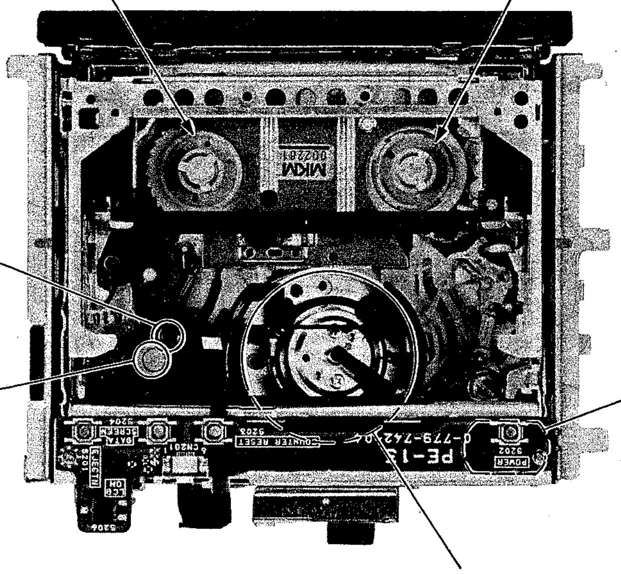

❷ Screw (M2×3)
❺ Frame assembly
❸ Screw (M2×3)
❹ Flexible holder
❶ Screw (M2×3)
❿ SL-26 board
❽ FP-437 flexible board
❼ Front frame
❻ Two screws (M2×3)
❾ FP-562 flexible board

2-11. REMOVAL OF TELESCOPIC ANTENNA AND CABINET (L, R) ASSEMBLIES


❶ Screw (M2×10)
❷ Telescopic antenna
❹ Screw (M2×4)
❸ Button door assembly
❺ Front panel assembly
❽ Cabinet (L) assembly
❼ Cabinet (R) assembly
❻ Three screws (PTP2×8)

2-12. INTERNAL VIEWS

– Top Side –



T reel table assembly
X-3941-274-1

S reel table assembly
X-3941-275-1

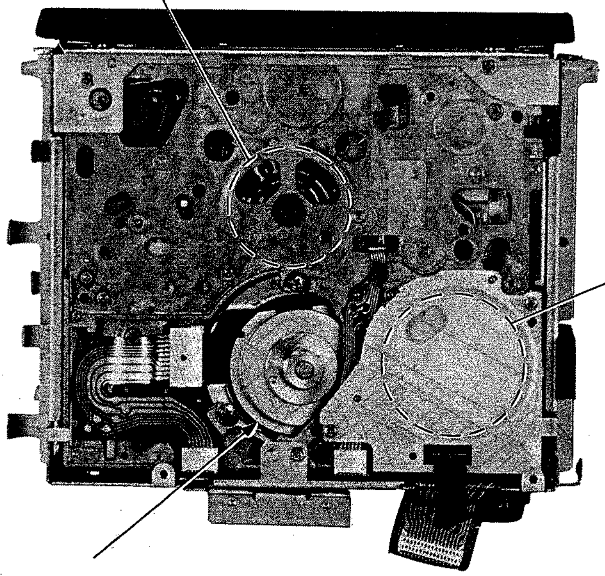
Pinch roller

M902
Capstan motor
(SCE-0102A)
8-835-492-01

M903
Loading motor assembly
A-7040-304-A

M901
Drum assembly (DGH-93A-R)
A-7048-635-A
Upper drum assembly (DGR-93-R)
A-7049-568-A

— Bottom side —



S001
Encoder switch
1-572-986-11

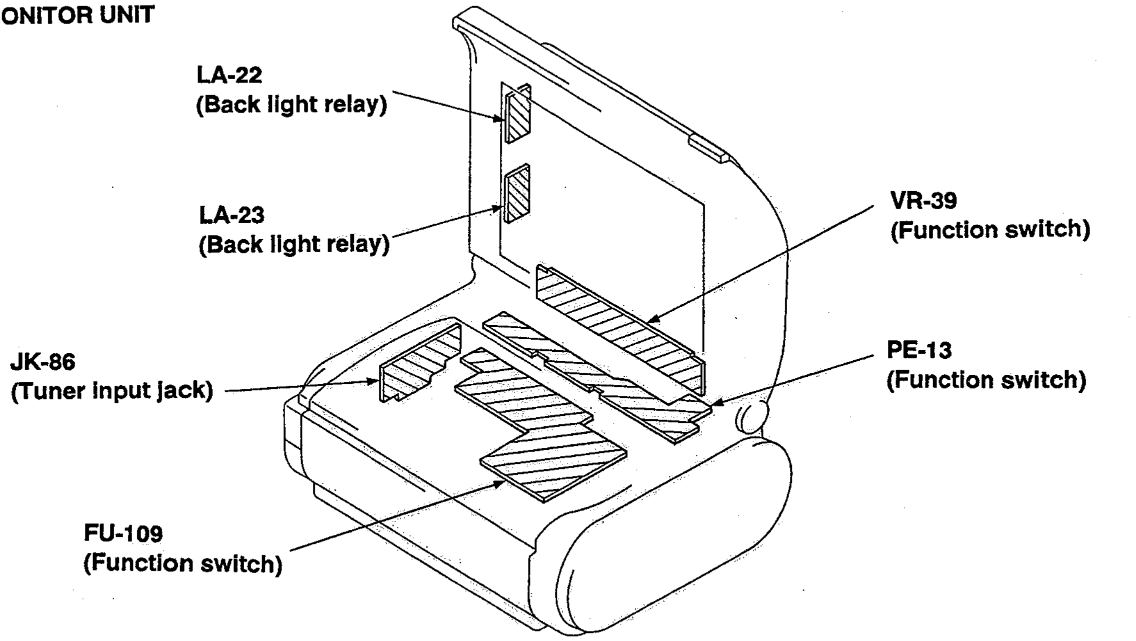
M902
Capstan motor
(SCE-0102A)
8-835-492-01

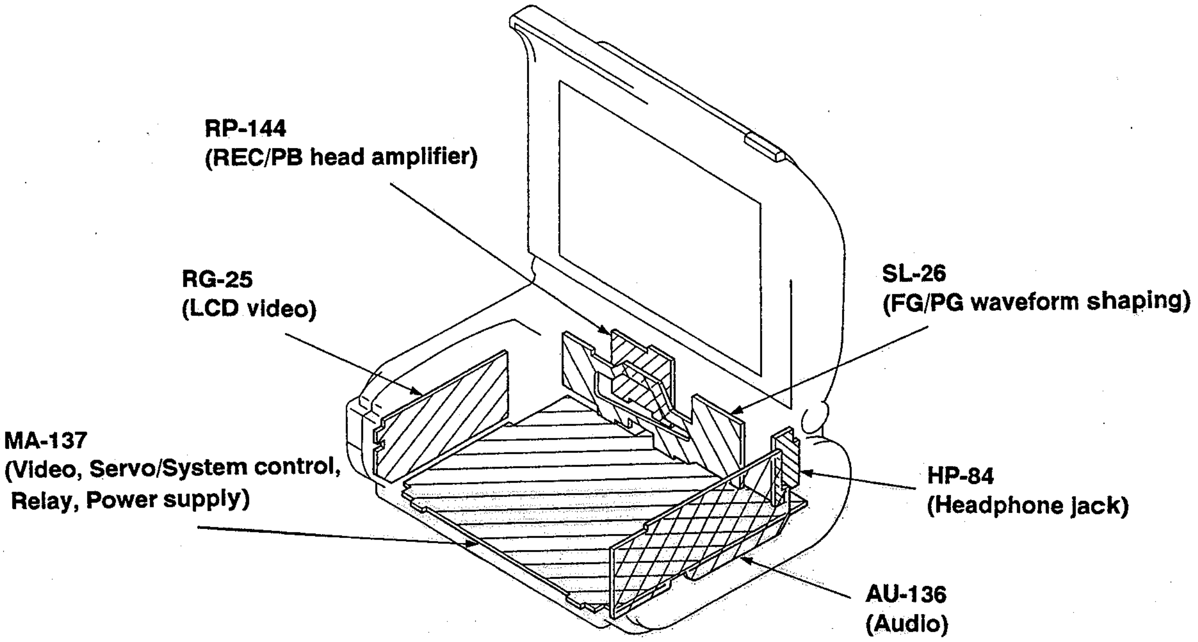
M901
Drum assembly (DGH-93A-R)
A-7048-635-A

SECTION 3
DIAGRAMS

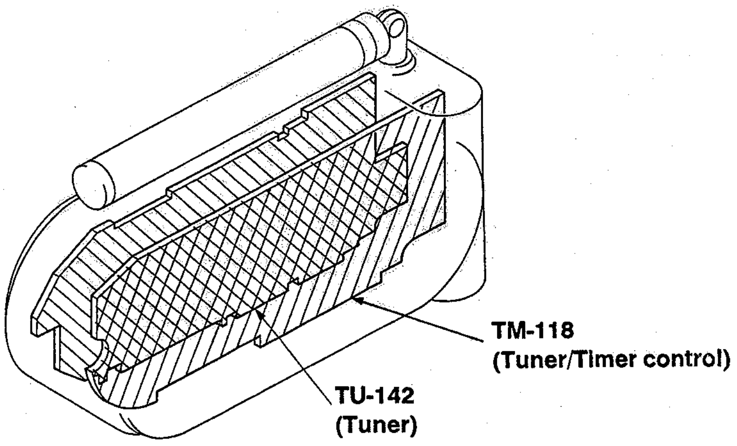
3-1. CIRCUIT BOARDS LOCATION

VTR/MONITOR UNIT

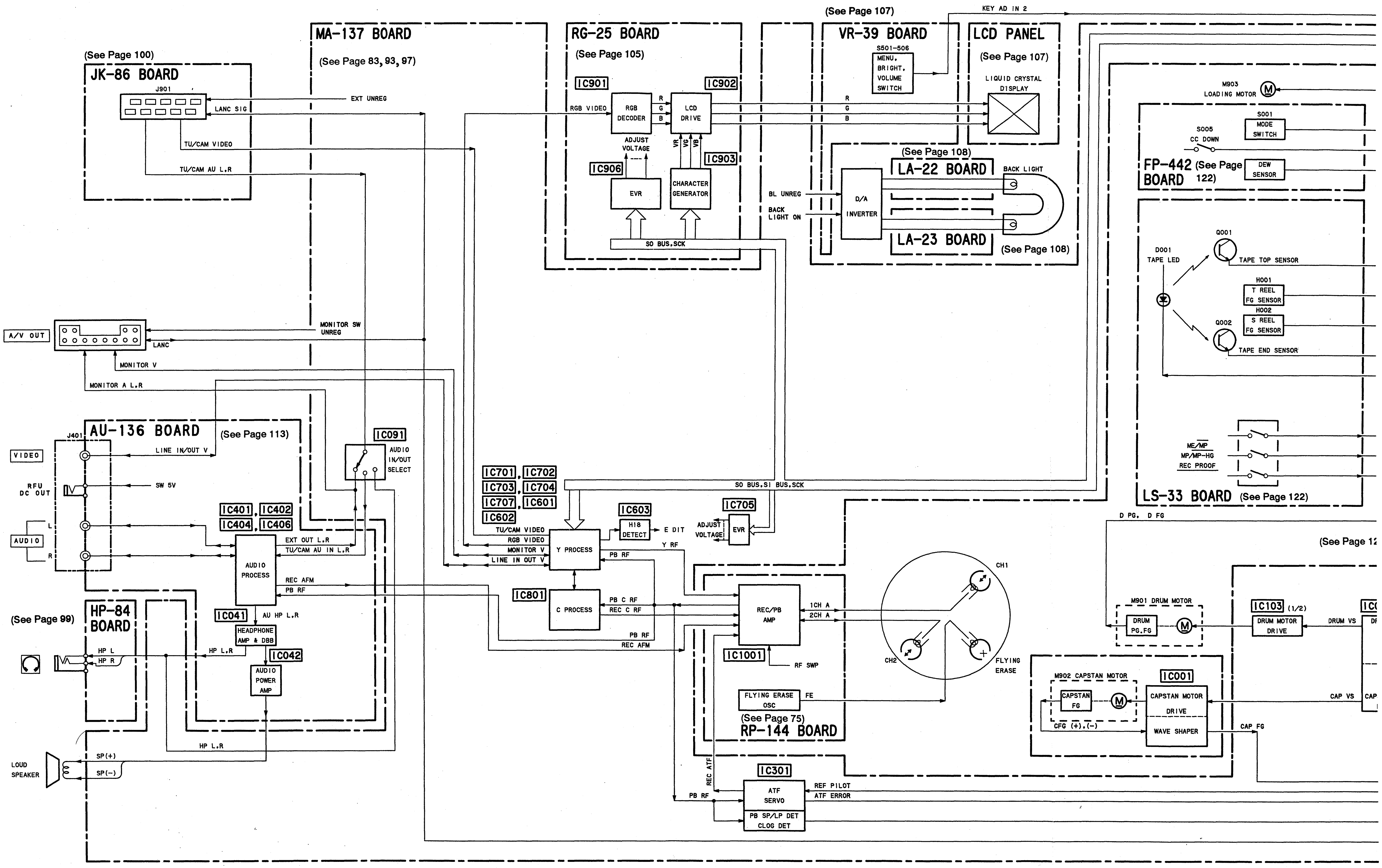

LA-22
(Back light relay)
LA-23
(Back light relay)
VR-39
(Function switch)
JK-86
(Tuner input jack)
PE-13
(Function switch)
FU-109
(Function switch)


RP-144
(REC/PB head amplifier)
RG-25
(LCD video)
SL-26
(FG/PG waveform shaping)
MA-137
(Video, Servo/System control,
Relay, Power supply)
HP-84
(Headphone jack)
AU-136
(Audio)

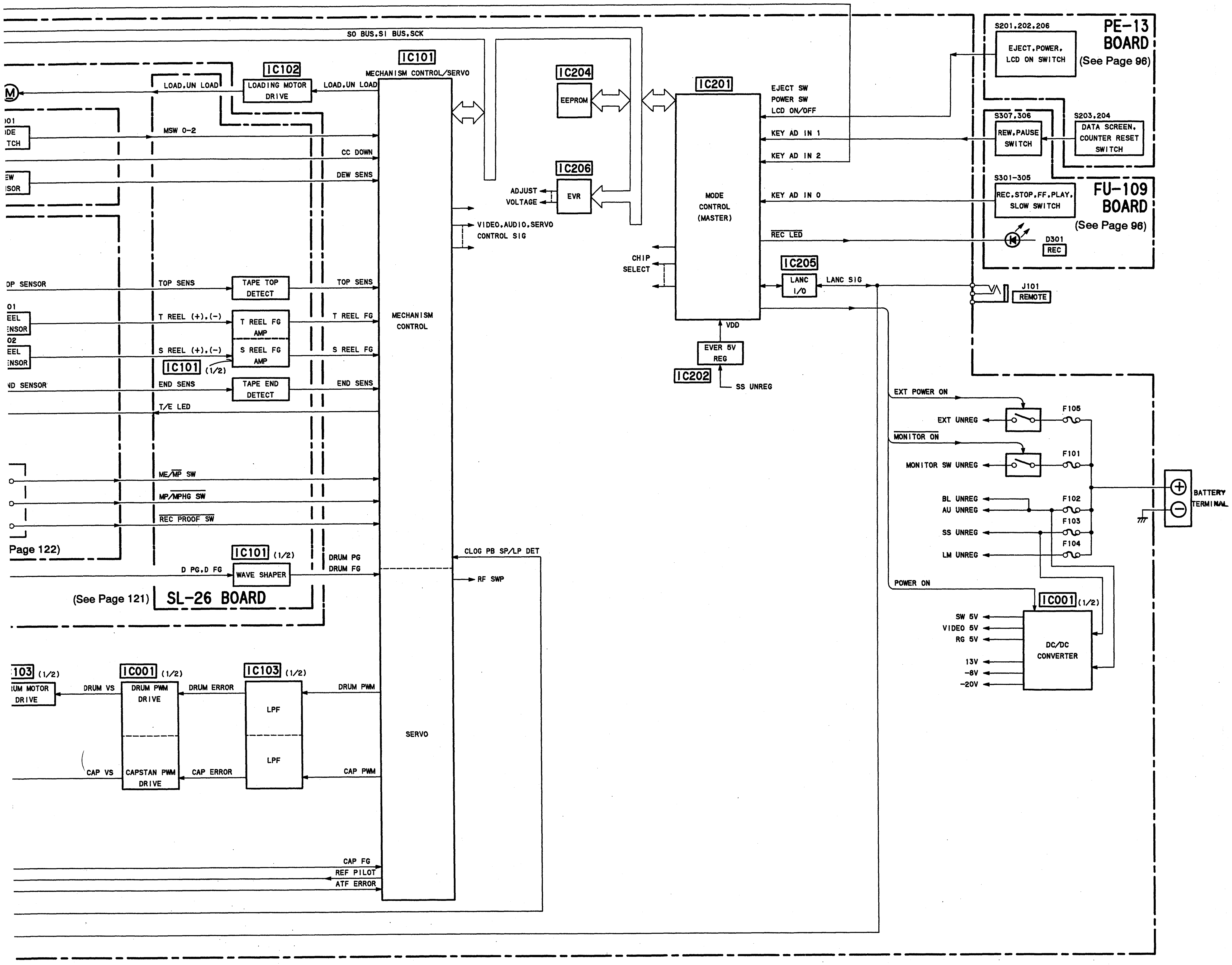
TUNER/TIMER UNIT


TM-118
(Tuner/Timer control)
TU-142
(Tuner)

3-2. OVERALL BLOCK DIAGRAM

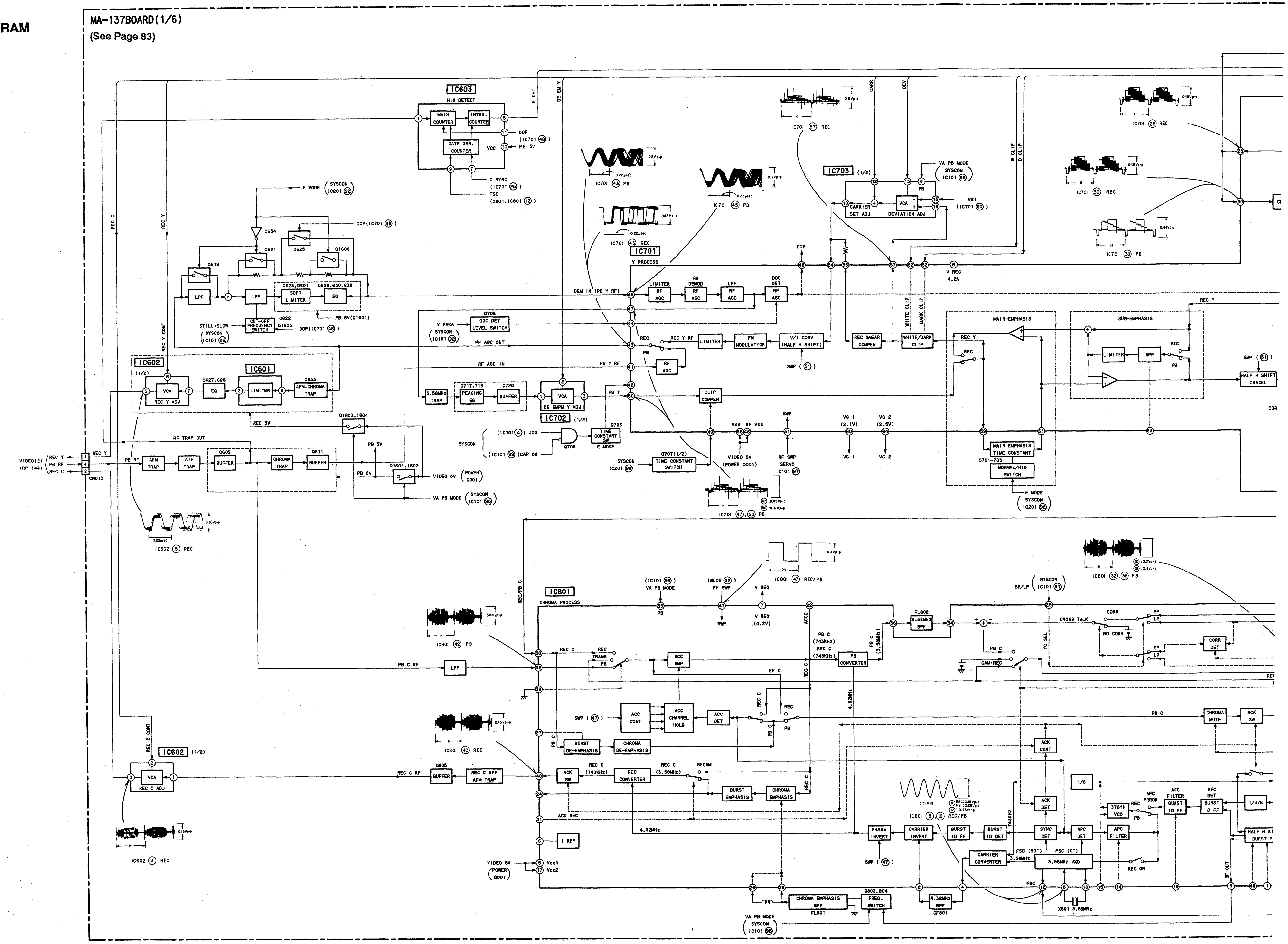


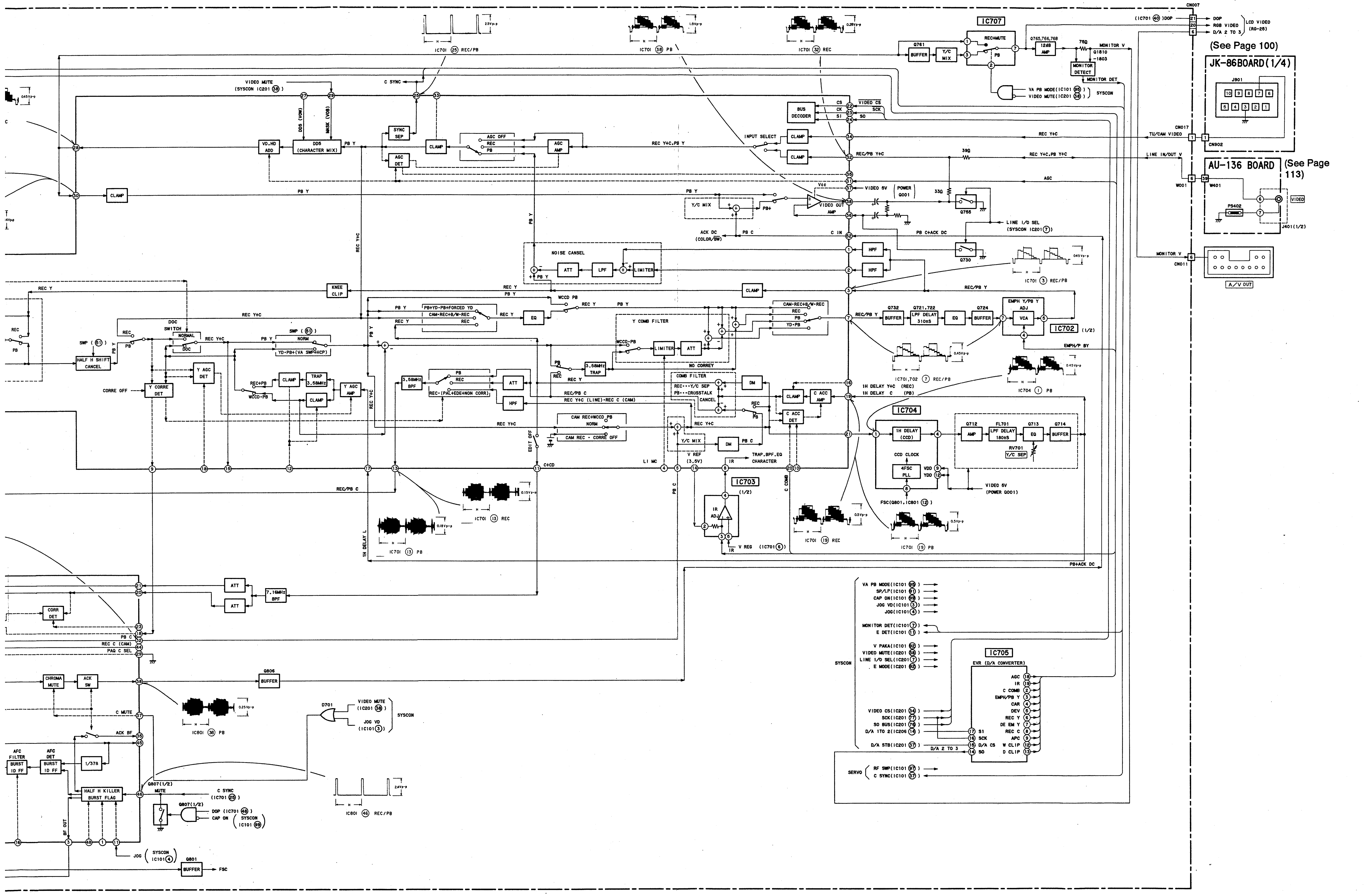
JK-86 BOARD
(See Page 100)
J901
LANC SIG
TU/CAM VIDEO
TU/CAM AU L.R
MA-137 BOARD
(See Page 83, 93, 97)
EXT UNREG
RG-25 BOARD
(See Page 105)
IC901
IC902
RGB VIDEO
RGB DECODER
LCD DRIVE
R
G
B
ADJUST VOLTAGE
VR
VG
VB
IC906
IC903
EVR
CHARACTER GENERATOR
SO BUS.SCK
(See Page 107)
VR-39 BOARD
S501-506
MENU, BRIGHT, VOLUME SWITCH
KEY AD IN 2
LCD PANEL
(See Page 107)
LIQUID CRYSTAL DISPLAY
(See Page 108)
LA-22 BOARD
BACK LIGHT
BL UNREG
BACK LIGHT ON
D/A INVERTER
LA-23 BOARD
(See Page 108)
M903
LOADING MOTOR
S001
MODE SWITCH
S005
CC DOWN
FP-442 BOARD
(See Page 122)
DEW SENSOR
Q001
D001
TAPE LED
TAPE TOP SENSOR
H001
T REEL FG SENSOR
H002
S REEL FG SENSOR
Q002
TAPE END SENSOR
A/V OUT
MONITOR SW UNREG
LANC
MONITOR V
MONITOR A L.R
ME/MP
MP/MP-HG
REC PROOF
LS-33 BOARD
(See Page 122)
AU-136 BOARD
(See Page 113)
J401
VIDEO
LINE IN/OUT V
RFU DC OUT
SW 5V
AUDIO
L
R
IC091
AUDIO IN/OUT SELECT
IC401, IC402
IC404, IC406
AUDIO PROCESS
EXT OUT L.R
TU/CAM AU IN L.R
REC AFM
PB RF
IC701, IC702
IC703, IC704
IC707, IC601
IC602
TU/CAM VIDEO
RGB VIDEO
MONITOR V
LINE IN OUT V
Y PROCESS
SO BUS.SI BUS.SCK
IC603
H18 DETECT
E DIT
Y RF
IC705
ADJUST VOLTAGE
EVR
PB RF
D PG, D FG
(See Page 12
IC801
C PROCESS
PB C RF
REC C RF
PB RF
REC AFM
(See Page 99)
HP-84 BOARD
IC041
AU HP L.R
HEADPHONE AMP & DBB
IC042
AUDIO POWER AMP
HP L
HP R
HP L.R
HP L.R
LOUD SPEAKER
SP(+)
SP(-)
REC/PB AMP
1CH A
2CH A
IC1001
RF SWP
CH1
CH2
FLYING ERASE
FLYING ERASE OSC
FE
(See Page 75)
RP-144 BOARD
M901 DRUM MOTOR
DRUM PG.FG
IC103 (1/2)
DRUM MOTOR DRIVE
DRUM VS
IC
DF
M902 CAPSTAN MOTOR
CAPSTAN FG
IC001
CAPSTAN MOTOR DRIVE
WAVE SHAPER
CFG (+), (-)
CAP FG
CAP VS
CAP
REC ATF
IC301
ATF SERVO
PB SP/LP DET
CLOG DET
REF PILOT
ATF ERROR
PB RF


SO BUS,SI BUS,SCK
IC101
MECHANISM CONTROL/SERVO
IC102
LOADING MOTOR DRIVE
LOAD,UN LOAD
LOAD,UN LOAD
M
MSW 0-2
CC DOWN
DEW SENS
TOP SENSOR
TOP SENS
TAPE TOP DETECT
TOP SENS
T REEL (+),(−)
T REEL FG AMP
T REEL FG
S REEL (+),(−)
S REEL FG AMP
S REEL FG
IC101 (1/2)
END SENSOR
END SENS
TAPE END DETECT
END SENS
T/E LED
ME/MP SW
MP/MPHG SW
REC PROOF SW
Page 122)
IC101 (1/2)
D PG,D FG
WAVE SHAPER
DRUM PG
DRUM FG
(See Page 121)
SL-26 BOARD
MECHANISM CONTROL
SERVO
VIDEO,AUDIO,SERVO CONTROL SIG
CLOG PB SP/LP DET
RF SWP
IC103 (1/2)
DRUM MOTOR DRIVE
DRUM VS
IC001 (1/2)
DRUM PWM DRIVE
CAPSTAN PWM DRIVE
CAP VS
DRUM ERROR
CAP ERROR
IC103 (1/2)
LPF
LPF
DRUM PWM
CAP PWM
CAP FG
REF PILOT
ATF ERROR
IC204
EEPROM
IC206
EVR
ADJUST VOLTAGE
CHIP SELECT
IC201
MODE CONTROL (MASTER)
EJECT SW
POWER SW
LCD ON/OFF
KEY AD IN 1
KEY AD IN 2
KEY AD IN 0
REC LED
IC205
LANC I/O
LANC SIG
VDD
EVER 5V REG
IC202
SS UNREG
S201,202,206
EJECT,POWER, LCD ON SWITCH
PE-13 BOARD
(See Page 96)
S307,306
REW,PAUSE SWITCH
S203,204
DATA SCREEN, COUNTER RESET SWITCH
S301-305
REC,STOP,FF,PLAY, SLOW SWITCH
FU-109 BOARD
(See Page 96)
D301
REC
J101
REMOTE
EXT POWER ON
EXT UNREG
F105
MONITOR ON
MONITOR SW UNREG
F101
BL UNREG
AU UNREG
F102
SS UNREG
F103
LM UNREG
F104
BATTERY TERMINAL
POWER ON
IC001 (1/2)
DC/DC CONVERTER
SW 5V
VIDEO 5V
RG 5V
13V
-8V
-20V

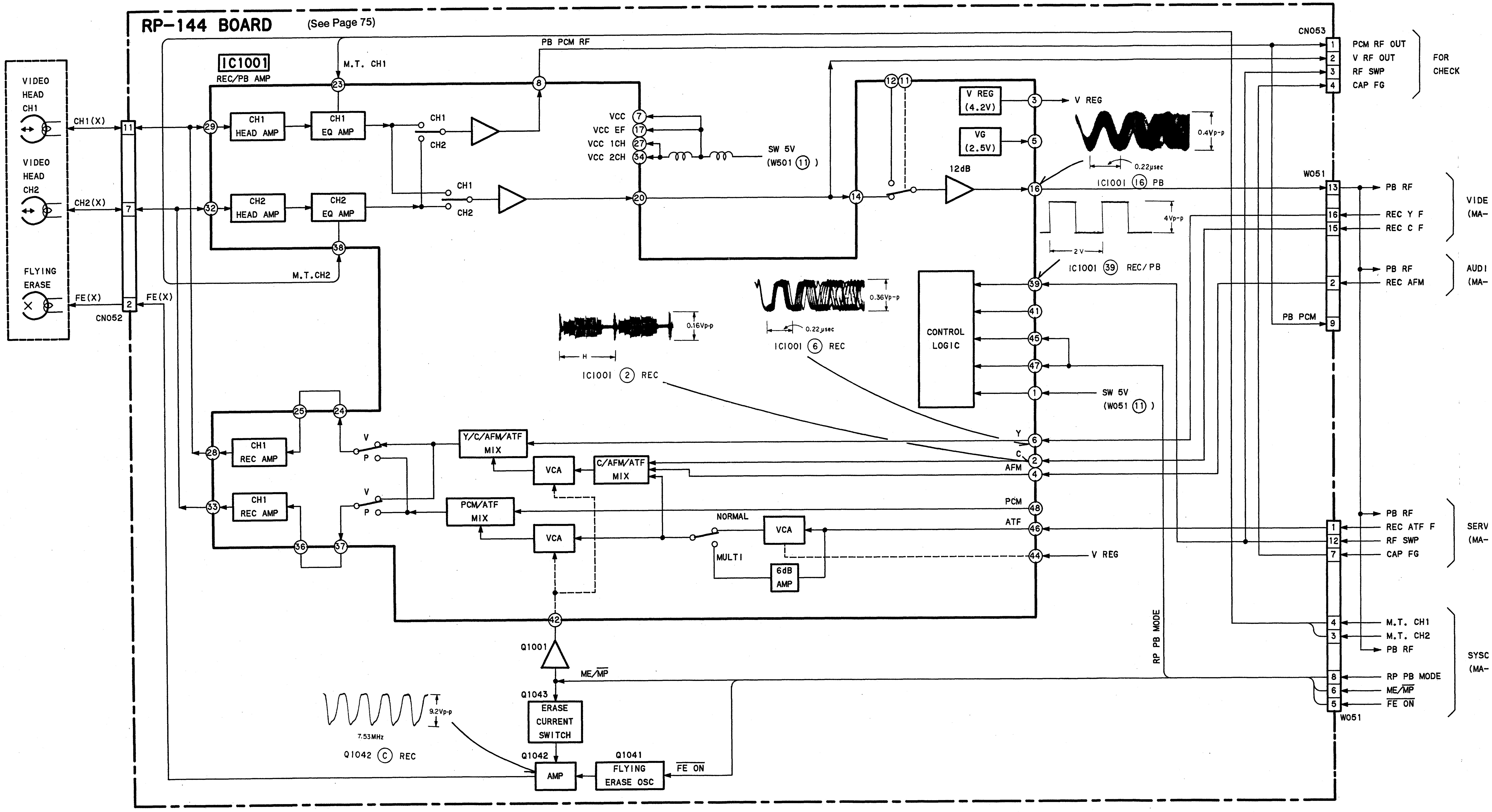
3-3. VIDEO (1) BLOCK DIAGRAM

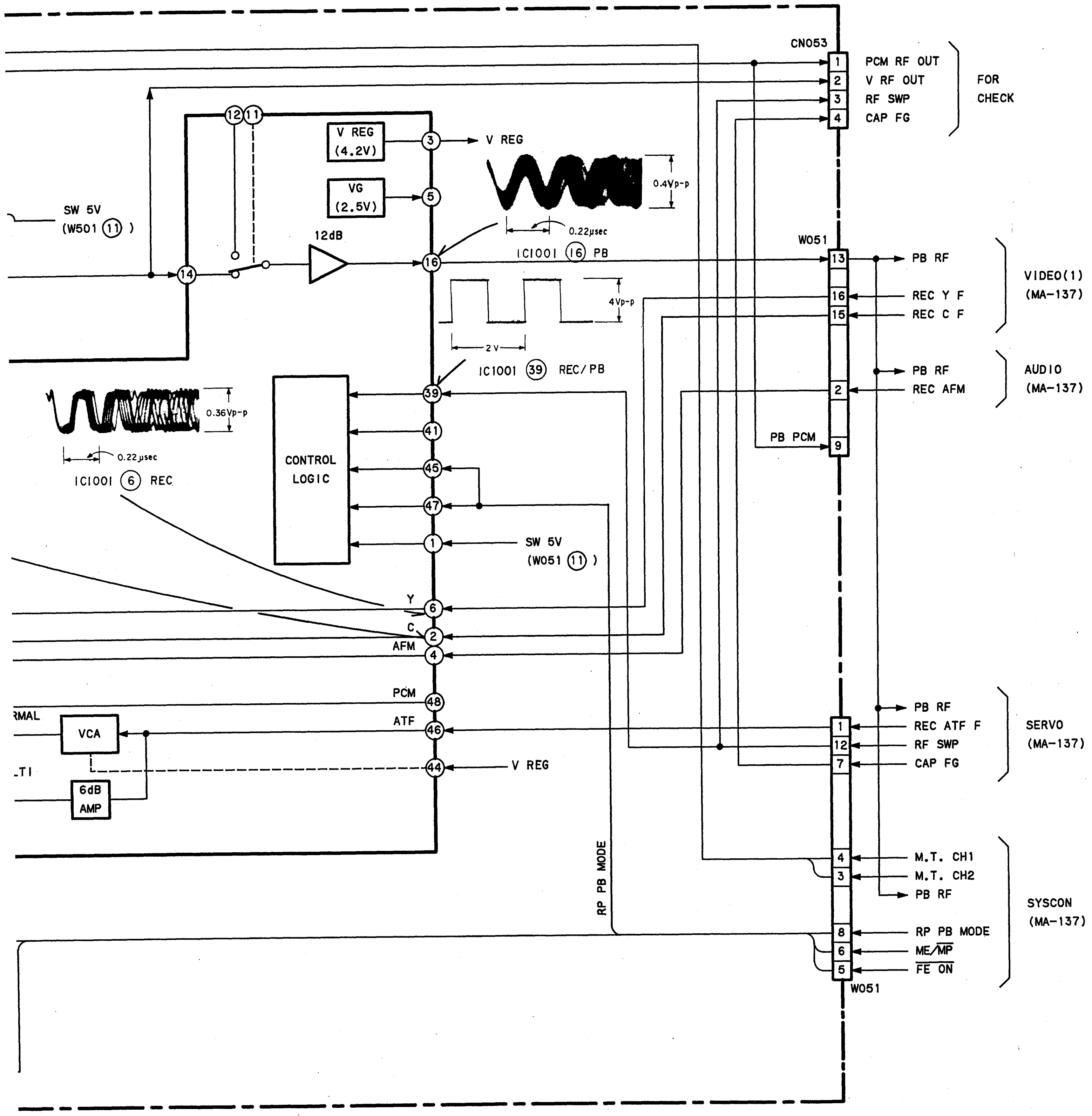
MA-137BOARD(1/6)
(See Page 83)


IC603
H18 DETECT
MAIN COUNTER
INTEG. COUNTER
GATE GEN. COUNTER
DOP (IC701 48)
PB 5V
C SYNC (IC701 25)
FSC (Q801, IC801 12)
E MODE (SYSCON IC201 92)
DOP (IC701 48)
Q634
Q621
Q625
Q1606
Q619
LPF
SOFT LIMITER
EQ
Q623, D601
Q626, 630, 632
CUT-OFF FREQUENCY SWITCH
Q622 Q1605
STILL-SLOW (SYSCON IC101 26)
PB 5V (Q1601)
IC602 (1/2)
VCA
REC Y ADJ
Q627, 628
IC601
LIMITER
Q633
AFM, CHROMA TRAP
REC 5V
Q1603, 1604
RF TRAP OUT
VIDEO(2) (RP-144)
REC Y
PB RF
REC C
CN013
AFM TRAP
ATF TRAP
Q609 BUFFER
CHROMA TRAP
Q611 BUFFER
Q1601, 1602
VIDEO 5V (POWER Q001)
VA PB MODE (SYSCON IC101 95)
IC602 5 REC
IC701
Y PROCESS
DEM IN (PB Y RF)
LIMITER RF AGC
FM DEMOD RF AGC
LPF RF AGC
DOC DET RF AGC
Q705
DOC DET LEVEL SWITCH
V PAKA (SYSCON IC101 93)
PF AGC OUT
RF AGC IN
REC Y RF
LIMITER
FM MODULATOR
V/I CONV (HALF H SHIFT)
SWP (61)
RF AGC
3.58MHz TRAP
Q717, 719 PEAKING EQ
Q720 BUFFER
IC702 (1/2)
VCA
DE EMPH Y ADJ
CLIP COMPEN
Q706 TIME CONSTANT SW
E MODE
SYSCON (IC101 4) JOG (IC101 99) CAP ON
Q708
Q707 (1/2) TIME CONSTANT SWITCH
SYSCON IC201 92
VIDEO 5V (POWER Q001)
RF SWP SERVO IC101 97
VG 1 (2.1V)
VG 2 (2.8V)
IC703 (1/2)
CARRIER SET ADJ
VCA
DEVIATION ADJ
VA PB MODE (SYSCON IC101 95)
VG1 (IC701 60)
V REG 4.2V
REC SMEAR COMPEN
WHITE/DARK CLIP
WHITE CLIP
DARK CLIP
W CLIP
D CLIP
CARR
DEV
E DET
DE EM Y
REC C
REC Y
REC Y CONT
MAIN-EMPHASIS
SUB-EMPHASIS
LIMITER
HPF
MAIN EMPHASIS TIME CONSTANT
Q701-703
NORMAL/H18 SWITCH
E MODE SYSCON IC201 92
HALF H SHIFT CANCEL
SWP (61)
IC701 43 PB
IC701 45 PB
IC701 43 REC
IC701 57 REC
IC701 28 REC
IC701 30 REC
IC701 30 PB
IC701 47, 50 PB
IC801
CHROMA PROCESS
REC/PB C
(IC101 95) VA PB MODE
(W502 42) RF SWP
V REG (4.2V)
ACCO
FL802 3.58MHz BPF
SP/LP (SYSCON IC101 91)
CROSS TALK
CORR
NO CORR
CORR DET
YC SEL
CAM•REC
PB C
REC C
REC TRANS
ACC AMP
PB CONVERTER
PB C (743KHz)
REC C (743KHz)
EE C
PB C RF
LPF
SWP (47)
ACC CONT
ACC CHANNEL HOLD
ACC DET
BURST DE-EMPHASIS
CHROMA DE-EMPHASIS
CHROMA MUTE
ACK SW
ACK CONT
IC602 (1/2)
REC C CONT
VCA
REC C ADJ
REC C RF
Q805 BUFFER
REC C BPF AFM TRAP
ACK SW
REC CONVERTER
REC C (743KHz)
REC C (3.58MHz)
SECAM
BURST EMPHASIS
CHROMA EMPHASIS
ACK SEC
4.32MHz
I REF
VIDEO 5V (POWER Q001)
Vcc1
Vcc2
PHASE INVERT
CARRIER INVERT
BURST ID FF
BURST ID DET
SYNC DET
APC DET
APC FILTER
378fH VCO
AFC ERROR
AFC FILTER BURST ID FF
AFC DET BURST ID FF
1/378
1/8
ACK DET
CARRIER CONVERTER
3.58MHz VXO
FSC (90°)
FSC (0°)
REC ON
X801 3.58MHz
CHROMA EMPHASIS BPF FL801
Q803, 804 FREQ. SWITCH
4.32MHz BPF CF801
VA PB MODE (SYSCON IC101 95)
HALF H KI BURST F
BF OUT
IC801 42 PB
IC801 40 REC
IC801 47 REC/PB
IC801 32, 36 PB
IC801 6, 12 REC/PB
IC602 3 REC

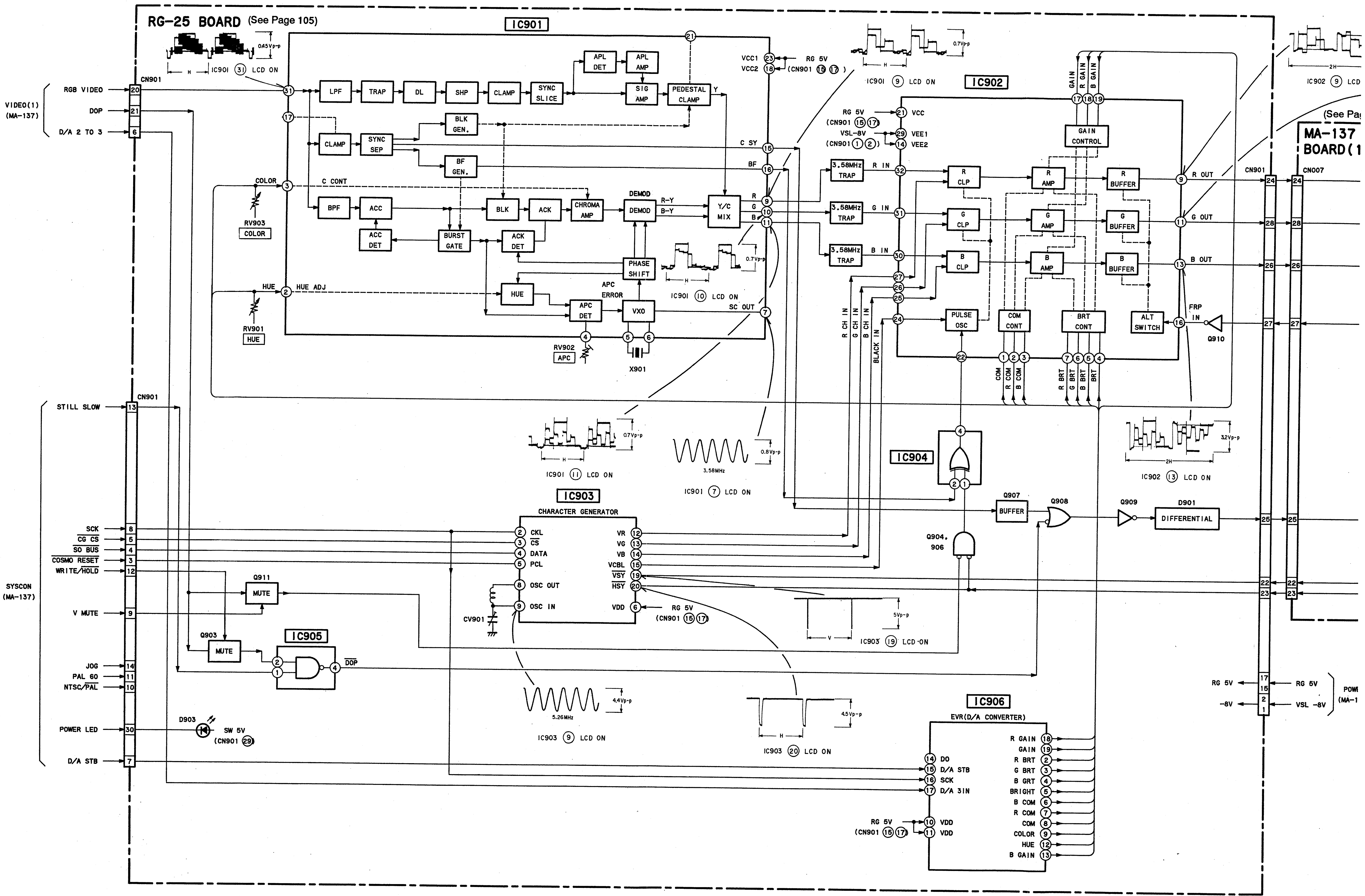

IC707
REC+MUTE
PB
Q761
BUFFER
Y/C MIX
Q765,766,768
12dB AMP
75Ω
MONITOR V
Q1810 -1803
MONITOR DETECT
MONITOR DET
VA PB MODE(IC101 95)
VIDEO MUTE(IC201 38)
SYSCON
CN007
(IC701 46)DOP
DOP
RGB VIDEO
D/A 2 TO 3
LCD VIDEO (RG-25)
(See Page 100)
JK-86BOARD(1/4)
J901
CN902
CN017
TU/CAM VIDEO
LINE IN/OUT V
AU-136 BOARD
(See Page 113)
W001
W401
PS402
VIDEO
J401(1/2)
MONITOR V
CN011
A/V OUT
IC701 25 REC/PB
IC701 38 PB
IC701 32 REC
2.5Vp-p
1.8Vp-p
0.28Vp-p
VIDEO MUTE (SYSCON IC201 38)
C SYNC
DDS (VDW)
MASK (VDB)
VD,HD ADD
DDS (CHARACTER MIX)
PB Y
SYNC SEP
CLAMP
AGC DET
AGC OFF
REC
PB
AGC AMP
REC Y+C,PB Y
BUS DECODER
CS
CK
SI
VIDEO CS
SCK
SO
INPUT SELECT
REC Y+C
REC/PB Y+C
39Ω
REC Y+C,PB Y+C
AGC
VIDEO 5V
POWER Q001
33Ω
Vcc
VIDEO OUT AMP
Q755
LINE I/O SEL (SYSCON IC201 7)
ACK DC (COLOR/BW)
PB C
C IN
PB C+ACK DC
NOISE CANSEL
ATT
LPF
LIMITER
HPF
Q730
IC701 3 REC/PB
0.45Vp-p
KNEE CLIP
REC Y
WCCD PB
CAM·REC+B/W·REC
YD·PB
Y COMB FILTER
WCCD·PB
NO CORREY
Q732 BUFFER
Q721,722 LPF DELAY 310nS
EQ
Q724 BUFFER
EMPH Y/PB Y ADJ
VCA
IC702 (1/2)
EMPH/P BY
IC701,702 7 REC/PB
IC704 1 PB
REC/PB Y
PB Y+YD·PB+FORCED YD
REC+CAM·REC+B/W·REC
DOC SWITCH
NORMAL
DOC
SWP (51)
NORM
YD·PB+(VA SWP+HCP)
HALF H SHIFT CANCEL
Y CORRE DET
CORRE OFF
Y AGC DET
REC+PB
WCCD·PB
TRAP 3.58MHz
Y AGC AMP
3.58MHz BPF
REC·(PAL+EDE+NON CORR)
3.58MHz TRAP
REC/PB C
REC Y+C (LINE)·REC C (CAM)
COMB FILTER
REC···Y/C SEP
PB···CROSSTALK CANCEL
DM
C ACC AMP
C ACC DET
1H DELAY Y+C (REC)
1H DELAY C (PB)
IC704
1H DELAY (CCD)
CCD CLOCK
4FSC PLL
VDD
Q712 AMP
FL701 LPF DELAY 180nS
Q713 EQ
Q714 BUFFER
RV701 Y/C SEP
VIDEO 5V (POWER Q001)
FSC(Q801,IC801 12)
CAM REC+WCCD PB
CAM REC · CORRE OFF
EDIT OFF
Y/C MIX
V REF (3.5V)
IR
TRAP,BPF,EQ CHARACTER
IC703 (1/2)
IR ADJ
V REG (IC701 6)
C+CD
LI MC
C COMB
IC701 13 REC
IC701 13 PB
0.15Vp-p
0.18Vp-p
1H DELAY L
IC701 19 REC
IC701 19 PB
0.5Vp-p
PB+ACK DC
ATT
7.16MHz BPF
CORR DET
PB C
REC C (CAM)
PAQ C SEL
CHROMA MUTE
ACK SW
Q806 BUFFER
IC801 38 PB
0.25Vp-p
C MUTE
ACK BF
AFC FILTER BURST ID FF
AFC DET BURST ID FF
1/378
HALF H KILLER BURST FLAG
Q807(1/2) MUTE
C SYNC (IC701 25)
DOP (IC701 46)
CAP ON (SYSCON IC101 99)
BF OUT
JOG (SYSCON IC101 4)
Q801 BUFFER
FSC
D701
VIDEO MUTE (IC201 38)
JOG VD (IC101 3)
SYSCON
IC801 46 REC/PB
2.4Vp-p
VA PB MODE(IC101 95)
SP/LP(IC101 61)
CAP ON(IC101 99)
JOG VD(IC101 3)
JOG(IC101 4)
MONITOR DET(IC101 7)
E DET(IC101 11)
V PAKA(IC101 92)
VIDEO MUTE(IC201 38)
LINE I/O SEL(IC201 7)
E MODE(IC201 92)
SYSCON
VIDEO CS(IC201 34)
SCK(IC201 77)
SO BUS(IC201 78)
D/A 1TO 2(IC206 14)
D/A STB(IC201 37)
D/A 2 TO 3
IC705
EVR (D/A CONVERTER)
AGC
IR
C COMB
EMPH/PB Y
CAR
DEV
REC Y
DE EM Y
REC C
APC
W CLIP
D CLIP
SI
SCK
D/A CS
SO
SERVO
RF SWP(IC101 37)
C SYNC(IC101 37)

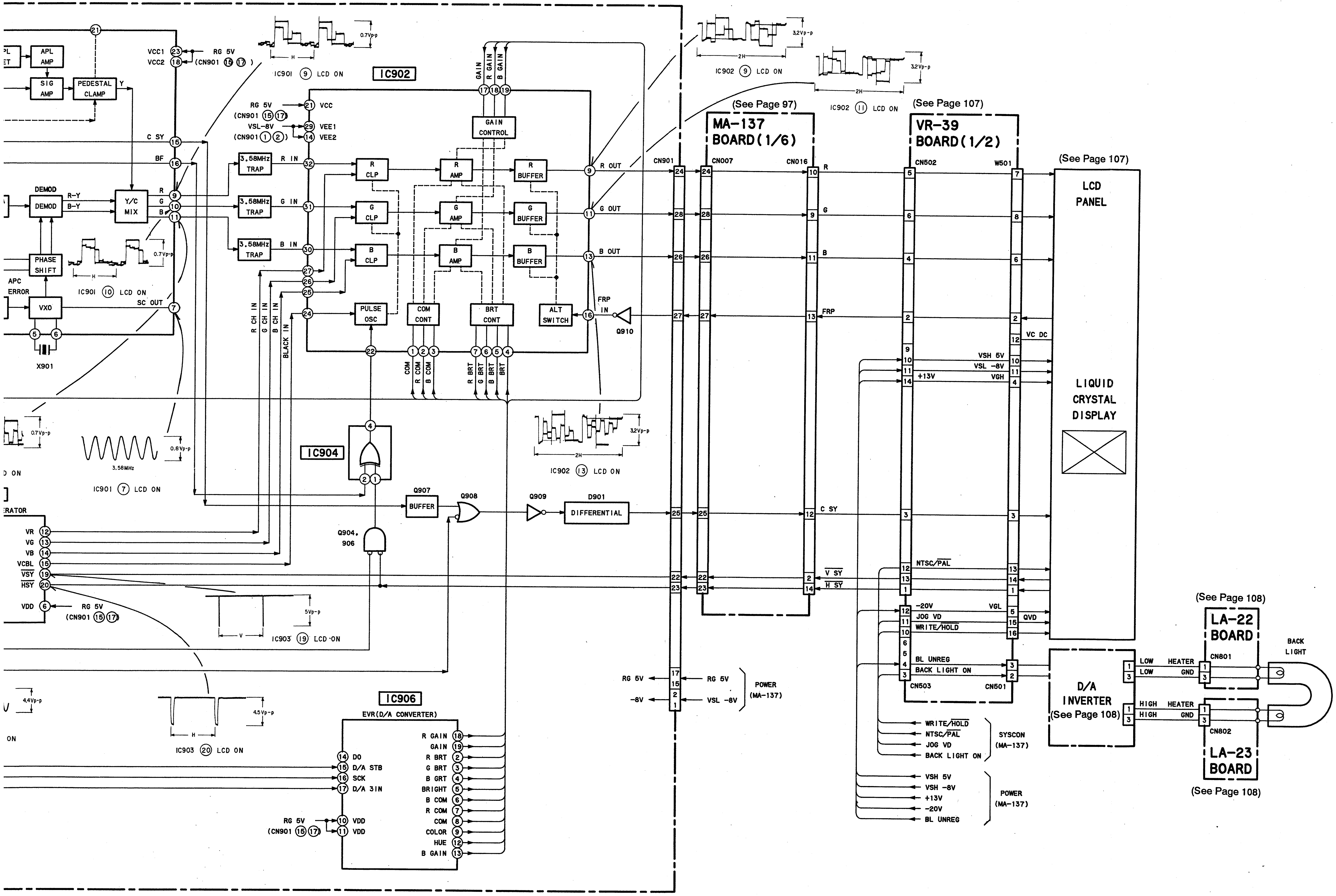
3-4. VIDEO (2) BLOCK DIAGRAM


RP-144 BOARD
(See Page 75)
IC1001
REC/PB AMP
VIDEO HEAD CH1
VIDEO HEAD CH2
FLYING ERASE
CH1(X)
CH2(X)
FE(X)
CN052
M.T. CH1
PB PCM RF
CH1 HEAD AMP
CH1 EQ AMP
CH2 HEAD AMP
CH2 EQ AMP
CH1
CH2
M.T.CH2
VCC
VCC EF
VCC 1CH
VCC 2CH
SW 5V
(W501 ⑪)
V REG
(4.2V)
VG
(2.5V)
12dB
V REG
0.4Vp-p
0.22μsec
IC1001 ⑯ PB
4Vp-p
2V
IC1001 ㊴ REC/PB
0.36Vp-p
0.22μsec
IC1001 ⑥ REC
0.16Vp-p
H
IC1001 ② REC
CONTROL LOGIC
SW 5V
(W051 ⑪)
CH1 REC AMP
CH2 REC AMP
Y/C/AFM/ATF MIX
C/AFM/ATF MIX
PCM/ATF MIX
VCA
VCA
VCA
V
P
Y
C
AFM
PCM
ATF
NORMAL
MULTI
6dB AMP
V REG
Q1001
ME/MP
Q1043
ERASE CURRENT SWITCH
Q1042
AMP
Q1041
FLYING ERASE OSC
FE ON
9.2Vp-p
7.53MHz
Q1042 Ⓒ REC
RP PB MODE
CN053
PCM RF OUT
V RF OUT
RF SWP
CAP FG
FOR CHECK
W051
PB RF
REC Y F
REC C F
VIDE (MA-
PB RF
REC AFM
AUDI (MA-
PB PCM
PB RF
REC ATF F
RF SWP
CAP FG
SERV (MA-
M.T. CH1
M.T. CH2
PB RF
RP PB MODE
ME/MP
FE ON
SYSC (MA-
W051

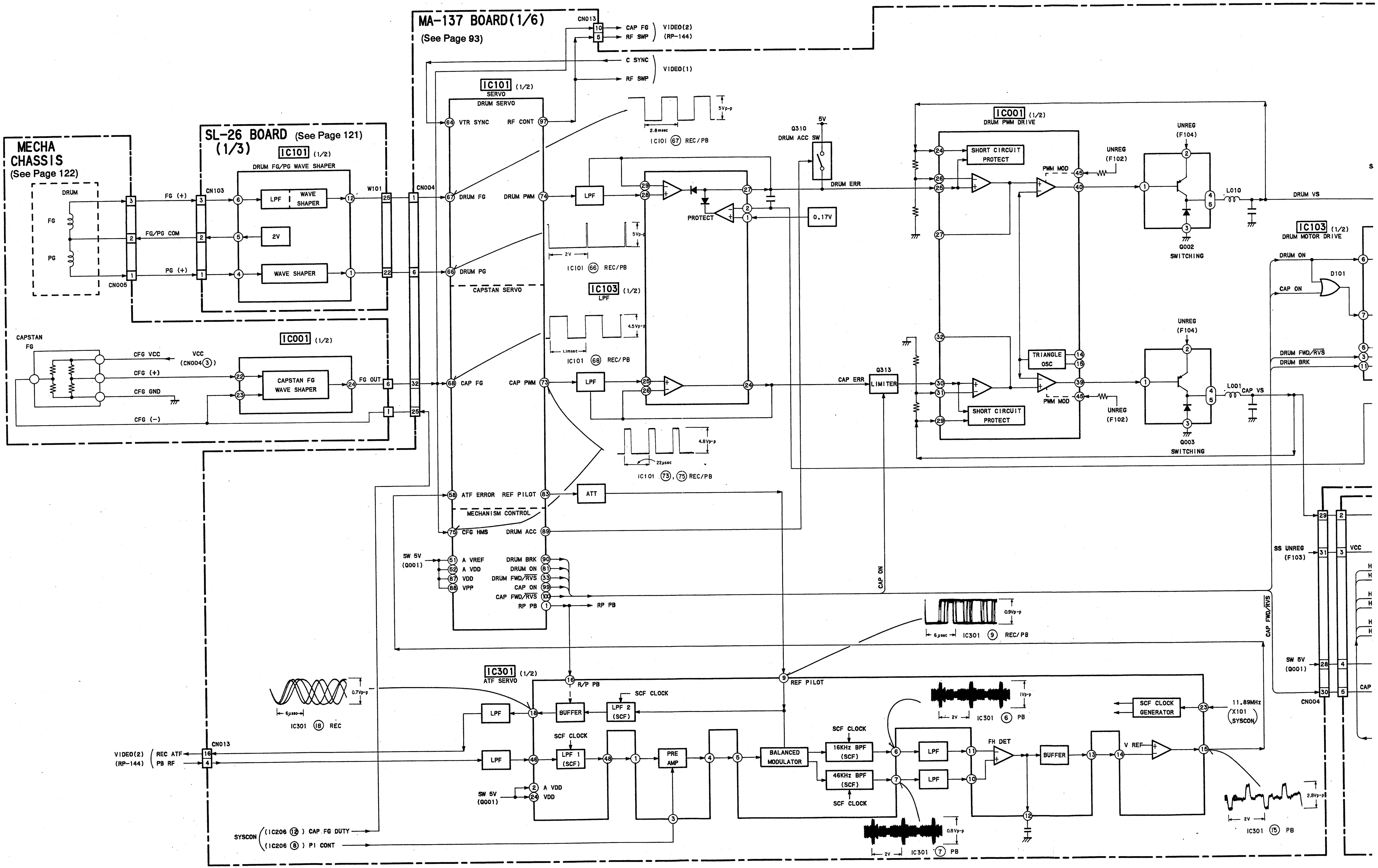

CN053
1 PCM RF OUT
2 V RF OUT
3 RF SWP
4 CAP FG
FOR CHECK
V REG (4.2V)
3 V REG
VG (2.5V)
5
0.4Vp-p
0.22μsec
SW 5V (W501 ⑪)
12dB
12 11
14
16
IC1001 ⑯ PB
W051
13 PB RF
16 REC Y F
15 REC C F
VIDEO(1) (MA-137)
4Vp-p
2 V
IC1001 ㊴ REC/PB
PB RF
2 REC AFM
AUDIO (MA-137)
0.36Vp-p
0.22μsec
IC1001 ⑥ REC
CONTROL LOGIC
39
41
45
47
1
SW 5V (W051 ⑪)
PB PCM 9
Y 6
C 2
AFM 4
PCM 48
ATF 46
44 V REG
RMAL
VCA
LTI
6dB AMP
PB RF
1 REC ATF F
12 RF SWP
7 CAP FG
SERVO (MA-137)
RP PB MODE
4 M.T. CH1
3 M.T. CH2
PB RF
SYSCON (MA-137)
8 RP PB MODE
6 ME/MP
5 FE ON
W051

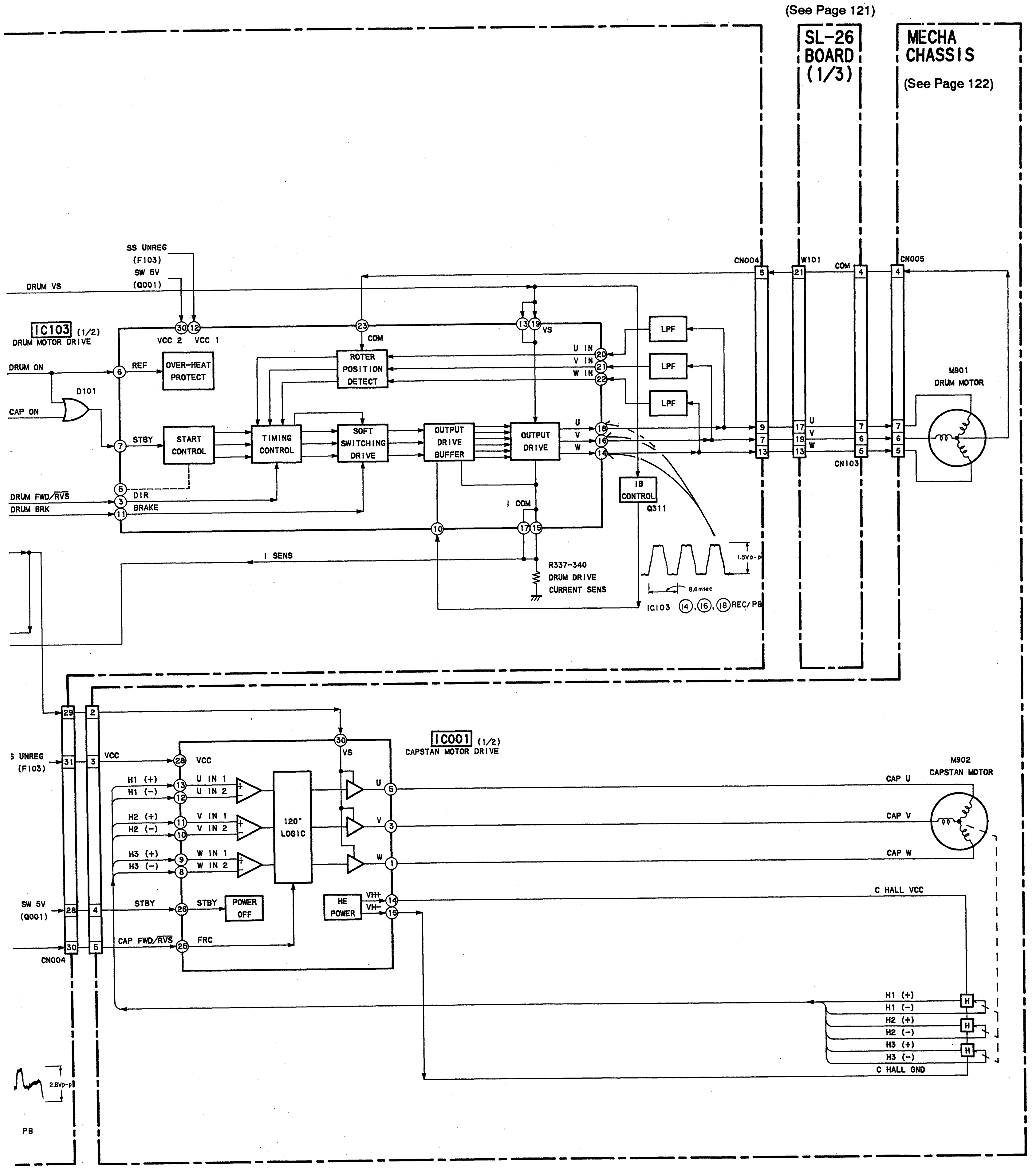
3-5. LCD BLOCK DIAGRAM


RG-25 BOARD (See Page 105)
IC901
IC901 ㉛ LCD ON
0.45Vp-p
CN901
VIDEO(1) (MA-137)
RGB VIDEO
DOP
D/A 2 TO 3
LPF
TRAP
DL
SHP
CLAMP
SYNC SLICE
APL DET
APL AMP
SIG AMP
PEDESTAL CLAMP
Y
VCC1
VCC2
RG 5V
(CN901 ⑮ ⑰)
BLK GEN.
CLAMP
SYNC SEP
BF GEN.
C SY
BF
COLOR
C CONT
RV903
COLOR
BPF
ACC
BLK
ACK
CHROMA AMP
DEMOD
R-Y
B-Y
Y/C MIX
R
G
B
ACC DET
BURST GATE
ACK DET
PHASE SHIFT
APC ERROR
IC901 ⑩ LCD ON
0.7Vp-p
HUE
HUE ADJ
RV901
HUE
APC DET
VXO
SC OUT
RV902
APC
X901
IC901 ⑨ LCD ON
IC902
RG 5V
(CN901 ⑮⑰)
VSL-8V
(CN901①②)
VCC
VEE1
VEE2
3.58MHz TRAP
R IN
G IN
B IN
R CLP
G CLP
B CLP
GAIN
R GAIN
B GAIN
GAIN CONTROL
R AMP
G AMP
B AMP
R BUFFER
G BUFFER
B BUFFER
R OUT
G OUT
B OUT
R CH IN
G CH IN
B CH IN
BLACK IN
PULSE OSC
COM CONT
BRT CONT
ALT SWITCH
FRP IN
Q910
COM
R COM
B COM
R BRT
G BRT
B BRT
BRT
IC902 ⑨ LCD
2H
(See Pa
MA-137 BOARD (1
CN901
CN007
IC901 ⑪ LCD ON
IC901 ⑦ LCD ON
0.8Vp-p
3.58MHz
IC904
IC902 ⑬ LCD ON
3.2Vp-p
Q907
BUFFER
Q908
Q909
D901
DIFFERENTIAL
Q904, 906
STILL SLOW
SCK
CG CS
SO BUS
COSMO RESET
WRITE/HOLD
SYSCON (MA-137)
V MUTE
JOG
PAL 60
NTSC/PAL
POWER LED
D/A STB
IC903
CHARACTER GENERATOR
CKL
CS
DATA
PCL
OSC OUT
OSC IN
VR
VG
VB
VCBL
VSY
HSY
VDD
RG 5V
(CN901 ⑮⑰)
CV901
Q911
MUTE
Q903
MUTE
IC905
DOP
D903
SW 5V
(CN901 ㉙)
IC903 ⑲ LCD ON
5Vp-p
V
IC903 ⑨ LCD ON
4.4Vp-p
5.26MHz
IC903 ⑳ LCD ON
4.5Vp-p
RG 5V
-8V
VSL -8V
POW (MA-1
IC906
EVR(D/A CONVERTER)
DO
D/A STB
SCK
D/A 3IN
VDD
R GAIN
GAIN
R BRT
G BRT
B GRT
BRIGHT
B COM
R COM
COM
COLOR
HUE
B GAIN
RG 5V
(CN901 ⑮⑰)

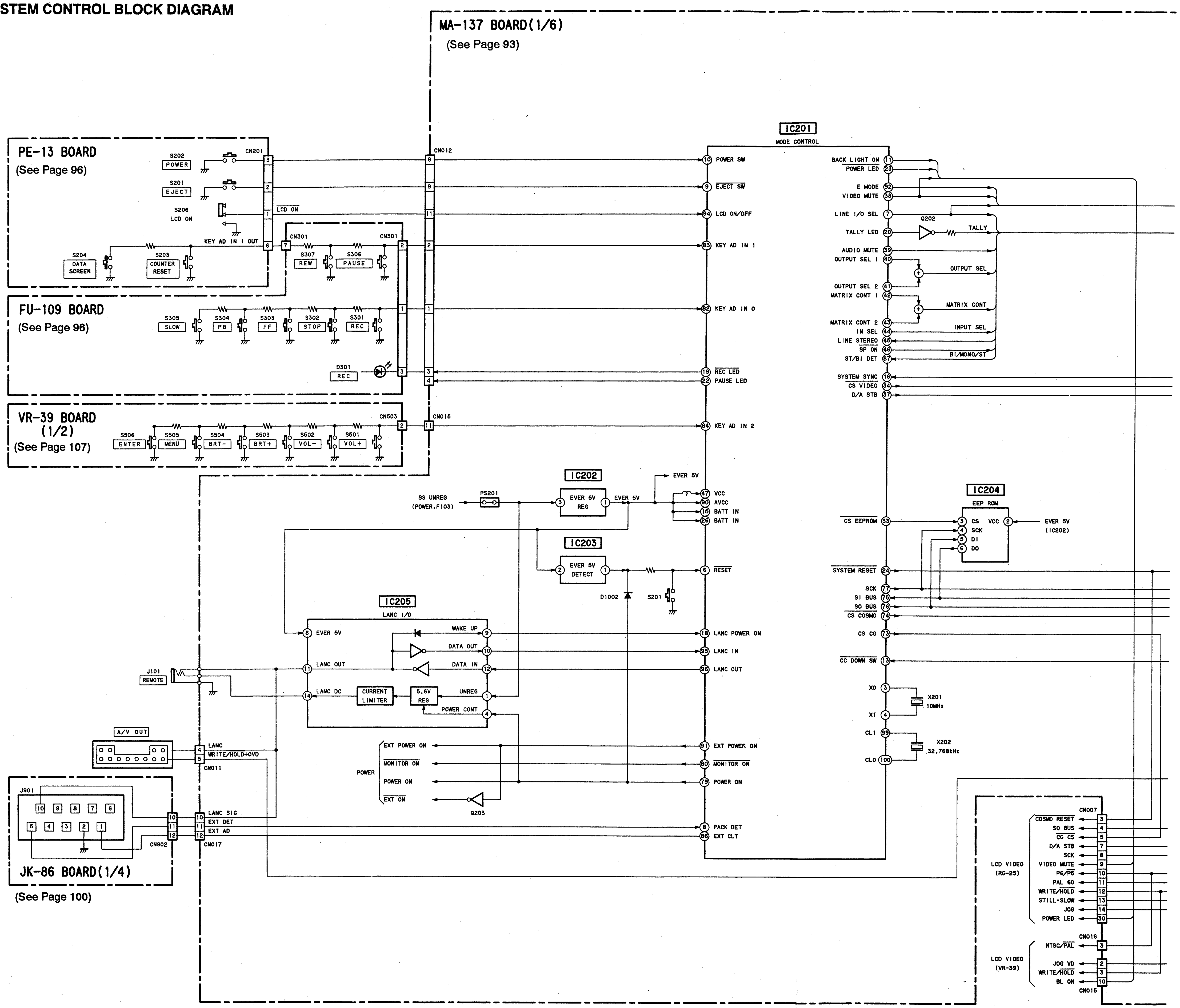

APL AMP
SIG AMP
PEDESTAL CLAMP
DEMOD
R-Y
B-Y
Y/C MIX
PHASE SHIFT
APC ERROR
VXO
X901
VCC1
VCC2
RG 5V
(CN901 ⑮⑰)
C SY
BF
SC OUT
IC901 ⑨ LCD ON
IC901 ⑩ LCD ON
IC901 ⑦ LCD ON
3.58MHz
0.7Vp-p
0.8Vp-p
IC902
VCC
VEE1
VEE2
VSL-8V
3.58MHz TRAP
R IN
G IN
B IN
R CLP
G CLP
B CLP
R AMP
G AMP
B AMP
R BUFFER
G BUFFER
B BUFFER
GAIN CONTROL
G GAIN
R GAIN
B GAIN
PULSE OSC
COM CONT
BRT CONT
ALT SWITCH
R OUT
G OUT
B OUT
FRP IN
Q910
R CH IN
G CH IN
B CH IN
BLACK IN
COM
R COM
G COM
B COM
R BRT
G BRT
B BRT
BRT
IC902 ⑨ LCD ON
IC902 ⑪ LCD ON
IC902 ⑬ LCD ON
3.2Vp-p
2H
IC904
Q907
BUFFER
Q908
Q909
D901
DIFFERENTIAL
Q904, 906
VR
VG
VB
VCBL
VSY
HSY
VDD
IC903 ⑲ LCD ON
IC903 ⑳ LCD ON
5Vp-p
4.5Vp-p
4.4Vp-p
IC906
EVR(D/A CONVERTER)
DO
D/A STB
SCK
D/A 3IN
VDD
R GAIN
GAIN
R BRT
G BRT
B GRT
BRIGHT
B COM
R COM
COLOR
HUE
B GAIN
CN901
RG 5V
-8V
VSL -8V
POWER (MA-137)
(See Page 97)
MA-137 BOARD(1/6)
CN007
CN016
R
G
B
FRP
C SY
V SY
H SY
(See Page 107)
VR-39 BOARD(1/2)
CN502
W501
VSH 5V
VSL -8V
+13V
VGH
VC DC
NTSC/PAL
-20V
VGL
JOG VD
WRITE/HOLD
QVD
BL UNREG
BACK LIGHT ON
CN503
CN501
(See Page 107)
LCD PANEL
LIQUID CRYSTAL DISPLAY
D/A INVERTER
(See Page 108)
LOW
HIGH
HEATER
GND
(See Page 108)
LA-22 BOARD
CN801
CN802
LA-23 BOARD
(See Page 108)
BACK LIGHT
SYSCON (MA-137)
VSH -8V
POWER (MA-137)

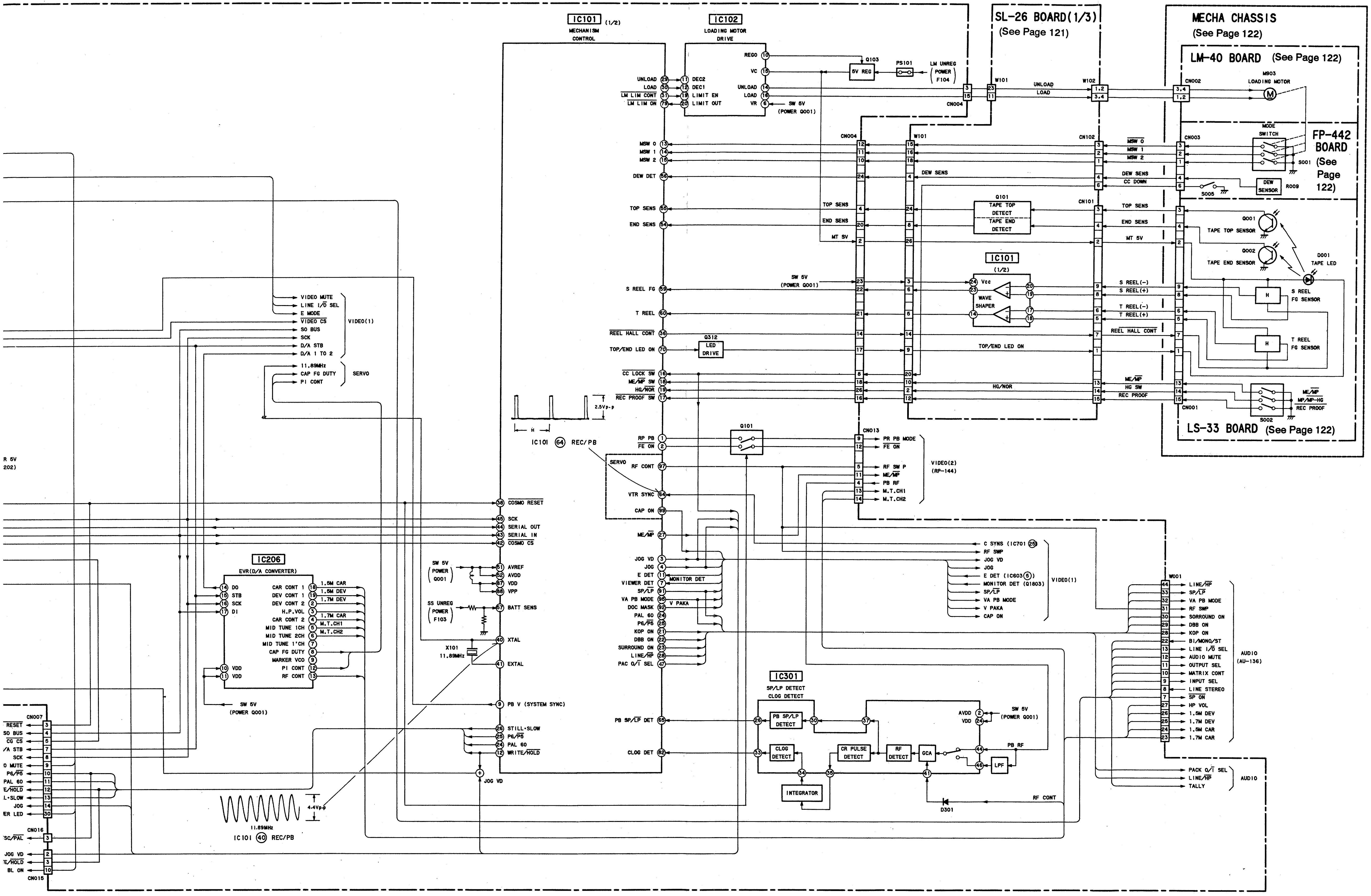
3-6. SERVO BLOCK DIAGRAM


MECHA CHASSIS
(See Page 122)
DRUM
FG
PG
CN005
CAPSTAN FG
SL-26 BOARD (See Page 121)
(1/3)
IC101 (1/2)
DRUM FG/PG WAVE SHAPER
CN103
FG (+)
FG/PG COM
PG (+)
LPF
WAVE SHAPER
2V
WAVE SHAPER
W101
IC001 (1/2)
CFG VCC
VCC
(CN004 ③)
CFG (+)
CFG GND
CFG (−)
CAPSTAN FG WAVE SHAPER
FG OUT
MA-137 BOARD(1/6)
(See Page 93)
CN013
CAP FG
RF SWP
VIDEO(2)
(RP-144)
C SYNC
RF SWP
VIDEO(1)
CN004
IC101 (1/2)
SERVO
DRUM SERVO
VTR SYNC
RF CONT
DRUM FG
DRUM PWM
DRUM PG
CAPSTAN SERVO
CAP FG
CAP PWM
ATF ERROR
REF PILOT
MECHANISM CONTROL
CFG HMS
DRUM ACC
SW 5V
(Q001)
A VREF
A VDD
VDD
VPP
DRUM BRK
DRUM ON
DRUM FWD/RVS
CAP ON
CAP FWD/RVS
RP PB
5Vp-p
2.8msec
IC101 67 REC/PB
5Vp-p
2V
IC101 66 REC/PB
IC103 (1/2)
LPF
4.5Vp-p
1.1msec
IC101 68 REC/PB
4.8Vp-p
22μsec
IC101 73, 75 REC/PB
LPF
PROTECT
LPF
ATT
5V
Q310
DRUM ACC SW
DRUM ERR
0.17V
CAP ERR
Q313
LIMITER
CAP ON
IC001 (1/2)
DRUM PWM DRIVE
SHORT CIRCUIT PROTECT
PWM MOD
UNREG
(F102)
TRIANGLE OSC
PWM MOD
SHORT CIRCUIT PROTECT
UNREG
(F102)
UNREG
(F104)
Q002
SWITCHING
UNREG
(F104)
Q003
SWITCHING
L010
DRUM VS
L001
CAP VS
IC103 (1/2)
DRUM MOTOR DRIVE
DRUM ON
D101
CAP ON
DRUM FWD/RVS
DRUM BRK
SS UNREG
(F103)
VCC
SW 5V
(Q001)
CAP
CN004
CAP FWD/RVS
0.9Vp-p
6μsec
IC301 9 REC/PB
IC301 (1/2)
ATF SERVO
R/P PB
REF PILOT
SCF CLOCK
0.7Vp-p
6μsec
IC301 18 REC
LPF
BUFFER
LPF 2
(SCF)
SCF CLOCK
LPF 1
(SCF)
PRE AMP
BALANCED MODULATOR
SCF CLOCK
16KHz BPF
(SCF)
46KHz BPF
(SCF)
SCF CLOCK
LPF
LPF
FH DET
BUFFER
V REF
SCF CLOCK GENERATOR
11.89MHz
(X101
SYSCON)
1Vp-p
2V
IC301 6 PB
0.8Vp-p
2V
IC301 7 PB
2.8Vp-p
2V
IC301 15 PB
A VDD
VDD
SW 5V
(Q001)
VIDEO(2)
(RP-144)
REC ATF
PB RF
CN013
SYSCON
(IC206 ⑫) CAP FG DUTY
(IC206 ⑧) PI CONT
S


(See Page 121)
SL-26 BOARD (1/3)
MECHA CHASSIS
(See Page 122)
SS UNREG (F103)
SW 5V (Q001)
DRUM VS
IC103 (1/2) DRUM MOTOR DRIVE
VCC 2
VCC 1
COM
VS
DRUM ON
REF
OVER-HEAT PROTECT
ROTER POSITION DETECT
U IN
V IN
W IN
LPF
D101
CAP ON
STBY
START CONTROL
TIMING CONTROL
SOFT SWITCHING DRIVE
OUTPUT DRIVE BUFFER
OUTPUT DRIVE
U
V
W
IB CONTROL
Q311
DRUM FWD/RVS
DRUM BRK
DIR
BRAKE
I COM
I SENS
R337-340 DRUM DRIVE CURRENT SENS
1.5Vp-p
8.4msec
IC103 ⑭,⑯,⑱ REC/PB
CN004
W101
COM
CN005
CN103
M901 DRUM MOTOR
S UNREG (F103)
IC001 (1/2) CAPSTAN MOTOR DRIVE
VCC
VS
H1 (+)
H1 (−)
U IN 1
U IN 2
H2 (+)
H2 (−)
V IN 1
V IN 2
H3 (+)
H3 (−)
W IN 1
W IN 2
120° LOGIC
SW 5V (Q001)
STBY
POWER OFF
HE POWER
VH+
VH−
CAP FWD/RVS
FRC
CN004
M902 CAPSTAN MOTOR
CAP U
CAP V
CAP W
C HALL VCC
H1 (+)
H1 (−)
H2 (+)
H2 (−)
H3 (+)
H3 (−)
C HALL GND
2.8Vp-p
PB

3-7. SYSTEM CONTROL BLOCK DIAGRAM


MA-137 BOARD(1/6)
(See Page 93)
PE-13 BOARD
(See Page 96)
FU-109 BOARD
(See Page 96)
VR-39 BOARD (1/2)
(See Page 107)
JK-86 BOARD(1/4)
(See Page 100)
S202 POWER
S201 EJECT
S206 LCD ON
S204 DATA SCREEN
S203 COUNTER RESET
KEY AD IN 1 OUT
LCD ON
CN201
CN301
S307 REW
S306 PAUSE
S305 SLOW
S304 PB
S303 FF
S302 STOP
S301 REC
D301 REC
CN503
S506 ENTER
S505 MENU
S504 BRT−
S503 BRT+
S502 VOL−
S501 VOL+
CN012
CN015
IC201
MODE CONTROL
POWER SW
EJECT SW
LCD ON/OFF
KEY AD IN 1
KEY AD IN 0
REC LED
PAUSE LED
KEY AD IN 2
EVER 5V
VCC
AVCC
BATT IN
BATT IN
RESET
LANC POWER ON
LANC IN
LANC OUT
EXT POWER ON
MONITOR ON
POWER ON
PACK DET
EXT CLT
BACK LIGHT ON
POWER LED
E MODE
VIDEO MUTE
LINE I/O SEL
Q202
TALLY LED
TALLY
AUDIO MUTE
OUTPUT SEL 1
OUTPUT SEL
OUTPUT SEL 2
MATRIX CONT 1
MATRIX CONT
MATRIX CONT 2
IN SEL
INPUT SEL
LINE STEREO
SP ON
ST/BI DET
BI/MONO/ST
SYSTEM SYNC
CS VIDEO
D/A STB
CS EEPROM
SYSTEM RESET
SCK
SI BUS
SO BUS
CS COSMO
CS CG
CG DOWN SW
X0
X1
CL1
CL0
X201 10MHz
X202 32.768kHz
IC204
EEP ROM
CS
VCC
SCK
DI
DO
EVER 5V (IC202)
IC202
SS UNREG (POWER.F103)
PS201
EVER 5V REG
EVER 5V
IC203
EVER 5V DETECT
D1002
S201
IC205
LANC I/O
EVER 5V
WAKE UP
DATA OUT
DATA IN
LANC OUT
LANC DC
CURRENT LIMITER
5.6V REG
UNREG
POWER CONT
J101 REMOTE
A/V OUT
LANC
WRITE/HOLD+QVD
CN011
J901
CN902
LANC SIG
EXT DET
EXT AD
CN017
POWER
EXT POWER ON
MONITOR ON
POWER ON
EXT ON
Q203
CN007
COSMO RESET
SO BUS
CG CS
D/A STB
SCK
VIDEO MUTE
PB/PB
PAL 60
WRITE/HOLD
STILL•SLOW
JOG
POWER LED
LCD VIDEO (RG-25)
CN016
NTSC/PAL
JOG VD
WRITE/HOLD
BL ON
LCD VIDEO (VR-39)
CN015


IC101 (1/2)
MECHANISM CONTROL
IC102
LOADING MOTOR DRIVE
SL-26 BOARD(1/3)
(See Page 121)
MECHA CHASSIS
(See Page 122)
LM-40 BOARD (See Page 122)
M903
LOADING MOTOR
FP-442 BOARD (See Page 122)
LS-33 BOARD (See Page 122)
UNLOAD
LOAD
LM LIM CONT
LM LIM ON
DEC2
DEC1
LIMIT EN
LIMIT OUT
REGO
VC
VR
SW 5V (POWER Q001)
Q103
5V REG
PS101
LM UNREG (POWER F104)
CN004
W101
W102
CN002
CN003
CN102
CN101
CN001
MODE SWITCH
S001
S005
DEW SENSOR
R009
MSW 0
MSW 1
MSW 2
DEW SENS
CC DOWN
TOP SENS
END SENS
MT 5V
Q101
TAPE TOP DETECT
TAPE END DETECT
Q001
TAPE TOP SENSOR
Q002
TAPE END SENSOR
D001
TAPE LED
IC101 (1/2)
Vcc
WAVE SHAPER
S REEL FG
T REEL
S REEL(-)
S REEL(+)
T REEL(-)
T REEL(+)
S REEL FG SENSOR
T REEL FG SENSOR
REEL HALL CONT
Q312
LED DRIVE
TOP/END LED ON
CC LOCK SW
ME/MP SW
HG/NOR
REC PROOF SW
HG SW
REC PROOF
S002
ME/MP
MP/MP-HG
2.5Vp-p
H
IC101 (64) REC/PB
RP PB
FE ON
Q101
CN013
PR PB MODE
FE ON
SERVO
RF CONT
VTR SYNC
CAP ON
ME/MP
RF SW P
PB RF
M.T.CH1
M.T.CH2
VIDEO(2) (RP-144)
VIDEO MUTE
LINE I/O SEL
E MODE
VIDEO CS
SO BUS
SCK
D/A STB
D/A 1 TO 2
VIDEO(1)
11.89MHz
CAP FG DUTY
PI CONT
SERVO
COSMO RESET
SCK
SERIAL OUT
SERIAL IN
COSMO CS
IC206
EVR(D/A CONVERTER)
DO
STB
SCK
DI
VDD
CAR CONT 1
DEV CONT 1
DEV CONT 2
H.P.VOL
CAR CONT 2
MID TUNE 1CH
MID TUNE 2CH
MID TUNE 1'CH
CAP FG DUTY
MARKER VCO
PI CONT
RF CONT
1.5M CAR
1.5M DEV
1.7M DEV
1.7M CAR
M.T.CH1
M.T.CH2
SW 5V (POWER Q001)
AVREF
AVDD
VDD
VPP
SS UNREG (POWER F103)
BATT SENS
X101 11.89MHz
XTAL
EXTAL
PB V (SYSTEM SYNC)
STILL·SLOW
P6/P5
PAL 60
WRITE/HOLD
JOG VD
JOG
E DET
VIEWER DET
SP/LP
VA PB MODE
DOC MASK
PAL 60
P6/P5
KOP ON
DBB ON
SURROUND ON
LINE/HP
PAC O/T SEL
MONITOR DET
V PAKA
C SYNS (IC701 (25))
RF SWP
JOG VD
JOG
E DET (IC603(5))
MONITOR DET (Q1803)
SP/LP
VA PB MODE
V PAKA
CAP ON
VIDEO(1)
W001
LINE/HP
SP/LP
VA PB MODE
RF SWP
SORROUND ON
DBB ON
KOP ON
BI/MONO/ST
LINE I/O SEL
AUDIO MUTE
OUTPUT SEL
MATRIX CONT
INPUT SEL
LINE STEREO
SP ON
HP VOL
1.5M DEV
1.7M DEV
1.5M CAR
1.7M CAR
AUDIO (AU-136)
PACK O/T SEL
LINE/HP
TALLY
AUDIO
IC301
SP/LP DETECT CLOG DETECT
PB SP/LP DETECT
CLOG DETECT
CR PULSE DETECT
RF DETECT
GCA
LPF
INTEGRATOR
D301
AVDD
VDD
PB RF
RF CONT
PB SP/LP DET
CLOG DET
4.4Vp-p
11.89MHz
IC101 (40) REC/PB
CN007
RESET
SO BUS
CG CS
/A STB
SCK
O MUTE
P6/P5
PAL 60
E/HOLD
L·SLOW
JOG
ER LED
CN016
SC/PAL
JOG VD
E/HOLD
BL ON
CN015
R 5V
202)

3-8. MECHANISM CONTROL MICRO PROCESSOR (IC101 on MA-137 Board: CXP80624A) PIN FUNCTIONS

<table>
<tr><th>Pin No.</th><th>Signal Name</th><th>I/O</th><th>Function</th></tr>
<tr><td>1</td><td>RP PB MODE</td><td>O</td><td>REC/PB switching signal of REC/PB amplifier and ATF servo IC. "H" when PB.</td></tr>
<tr><td>2</td><td>$\overline{\text{FE ON}}$</td><td>O</td><td>Flying erase oscillation ON/OFF control signal. Oscillation when "L".</td></tr>
<tr><td>3</td><td>JOG VD</td><td>O</td><td>False VD signal inserted into playback video signal during variable speed playback.</td></tr>
<tr><td>4</td><td>JOG</td><td>O</td><td>Variable speed playback/normal playback switching signal of video circuit. "H" during variable speed playback.</td></tr>
<tr><td>5</td><td></td><td></td><td rowspan="2">Not used.</td></tr>
<tr><td>6</td><td></td><td></td></tr>
<tr><td>7</td><td>VIEWER DET</td><td>I</td><td>Signal indicating that peripheral equipment is connected to A/V output pin.
"H" when peripheral equipment is connected.</td></tr>
<tr><td>8</td><td></td><td></td><td>Not used.</td></tr>
<tr><td>9</td><td>PB V</td><td>O</td><td>Used as the reference for serial data communication, LANC cycle. V sync.
Synchronizes with VTR SYNC (Pin (64)).</td></tr>
<tr><td>10</td><td></td><td></td><td>Not used.</td></tr>
<tr><td>11</td><td>E DET</td><td>I</td><td>Normal/Hi8 discrimination input. "H" when playing back a Hi8 tape recorded.</td></tr>
<tr><td>12</td><td>WRITE/$\overline{\text{HOLD}}$</td><td>O</td><td>RGB signal data writing control signal to LCD panel. Normally "H".</td></tr>
<tr><td>13</td><td>MODE SW 0</td><td>I</td><td rowspan="3">MODE switch input.
<table>
<tr><th></th><th>EJECT</th><th>USE</th><th>LOAD</th><th>READY</th><th>RP</th><th>FF</th></tr>
<tr><td>MODE SW 0</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>0</td></tr>
<tr><td>MODE SW 1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>0</td></tr>
<tr><td>MODE SW 2</td><td>1</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td></tr>
</table></td></tr>
<tr><td>14</td><td>MODE SW 1</td><td>I</td></tr>
<tr><td>15</td><td>MODE SW 2</td><td>I</td></tr>
<tr><td>16</td><td>$\overline{\text{CC LOCK SW}}$</td><td>I</td><td>Cassette compartment lock switch input. "L" when lock.</td></tr>
<tr><td>17</td><td>REC PROOF SW</td><td>I</td><td>Record-proof switch input. REC prohibition: "H".</td></tr>
<tr><td>18</td><td>ME/$\overline{\text{MP}}$ SW</td><td>I</td><td>Tape type discrimination switch input. ME: "H", MP: "L".</td></tr>
<tr><td>19</td><td>HG/$\overline{\text{NOR}}$</td><td>I</td><td>MP tape type discrimination switch input. Hi8 MP tape: "H", Normal tape: "L".</td></tr>
<tr><td>20</td><td></td><td></td><td rowspan="2">Not used.</td></tr>
<tr><td>21</td><td></td><td></td></tr>
<tr><td>22</td><td>DBB ON</td><td>O</td><td>DBB ON/OFF control signal. DBB ON at "H".</td></tr>
<tr><td>23</td><td>SURROUND ON</td><td>O</td><td>Surround ON/OFF signal. "Surround" ON at "H".</td></tr>
<tr><td>24</td><td></td><td></td><td rowspan="2">Not used.</td></tr>
<tr><td>25</td><td></td><td></td></tr>
<tr><td>26</td><td>STILL•SLOW</td><td>O</td><td>Signal indicating that STILL and SLOW playback is being performed.
"H" during SILL and SLOW playback.</td></tr>
<tr><td>27</td><td>ME/$\overline{\text{MP}}$</td><td>O</td><td>ME/MP switching signal output. MP tape: "L"</td></tr>
<tr><td>28</td><td>LINE/$\overline{\text{HP}}$</td><td>O</td><td>Switching signal of audio signal output to accessory pack pin.
LINE OUT audio: "H", Headphone audio: "L".</td></tr>
<tr><td>29</td><td>UNLOAD</td><td>O</td><td>Loading motor control signal. When unloading: "H" or "H" pulse.</td></tr>
<tr><td>30</td><td>LOAD</td><td>O</td><td>Loading motor control signal. When loading: "H" or "H" pulse.</td></tr>
<tr><td>31</td><td>LM LIM CONT</td><td>O</td><td>Loading motor current limiter control signal. Temporarily "H" when loading.</td></tr>
<tr><td>32</td><td></td><td></td><td>Not used.</td></tr>
<tr><td>33</td><td>DRUM FWD/$\overline{\text{REV}}$</td><td>O</td><td>Drum rotating direction control signal. Normally "H".</td></tr>
<tr><td>34</td><td></td><td></td><td rowspan="2">Not used.</td></tr>
<tr><td>35</td><td></td><td></td></tr>
<tr><td>36</td><td>$\overline{\text{REEL HALL CONT}}$</td><td>O</td><td>Power supply control signal of reel FG sensor. "L" pulse when REC/PB.</td></tr>
<tr><td>37</td><td>MP</td><td>I</td><td>Connected to GND.</td></tr>
<tr><td>38</td><td>$\overline{\text{COSMO RESET}}$</td><td>I</td><td>Reset signal. Reset when "L".</td></tr>
<tr><td>39</td><td>VSS</td><td></td><td>GND.</td></tr>
<tr><td>40</td><td>XTAL</td><td>O</td><td>11.89 MHz oscillation circuit output pin.</td></tr>
</table>

Pin No.	Signal Name	I/O	Function
41	EXTAL	I	11.89 MHz oscillation circuit input pin.
42	$\overline{\text{COSMO CS}}$	I	Chip select signal from mode control micro processor. V cycle "L" pulse.
43	SERIAL IN	I	Serial data input.
44	SERIAL OUT	O	Serial data output.
45	SCK	O	Serial clock output.
46			Not used.
47	PAC O/I SEL	O	Signal which controls the accessory pack pin signal direction. When "H", the signal is output from the main unit to the accessory pack.
48			Not used.
49			
50	AVSS		Analog port GND.
51	AVREF		Analog port reference voltage input (Connected to AVDD).
52	AVDD		Analog port power supply (+5V).
53			Not used.
54	END SENS	I	Tape end detecting signal. Normally "L". "H" pulse at tape end.
55	TOP SENS	I	Tape top detecting signal. Normally "L". "H" pulse at tape top.
56	$\overline{\text{DEW DET}}$	I	Condensation detection signal input. "L" when condensation occurred.
57	BATT SENSE	I	Battery voltage input for battery end detecting. The voltage divided into 2 by R114 and R115 is input.
58	ATF ERROR	I	ATF error, ATF lock error voltage input.
59	S REEL	I	S reel FG signal input.
60	T REEL	I	T reel FG signal input.
61			Not used.
62			
63			
64	VTR SYNC	I	Composite sync signal input separated from recording/playback Y signal.
65	SP/LP DET	I	Recording mode discrimination signal of the tape played back when CUE/REV/FF/REW. "H" when SP tape.
66	DRUM PG	I	Drum PG signal input. For drum phase servo. 33.3 msec. cycle "H" pulse when REC/PB.
67	DRUM FG	I	Drum FG signal input. For drum speed servo. 360 Hz square wave when REC/PB.
68	CAP FG	I	Capstan FG signal input. For capstan speed servo. Approx. 993 Hz in SP mode REC/PB, Approx. 497 Hz in LP mode REC/PB.
69			Not used.
70	TOP/END LED ON	O	LED ON/OFF signal for detecting tape top and end. "H" pulse during tape running.
71			Not used.
72			
73	CAP PWM	O	Capstan error signal output. 20.15 μsec. cycle PWM signal.
74	DRUM PWM	O	Drum error signal output. 20.15 μsec. cycle PWM signal.
75	CFG HMS	I	Capstan FG signal input for tape counter.
76			Not used.
77			
78			
79	$\overline{\text{LM LIM ON}}$	I	Loading motor driver current limiter detecting signal input. Normally "H". "L" when limiter is ON.
80			Not used.
81	DRUM ON	O	Drum motor ON/OFF control signal. Drum rotates at "H".
82	CLOG DET	I	Head clog detecting signal input. Normally "L".
83	REF PILOT	O	Reference pilot signal output for ATF servo. Synchronizes with drum rotation, switches four frequencies sequentially and outputs. f1=102.52 kHz, f2=118.95 kHz, f3=165.21 kHz, f4=148.69 kHz.

Pin No.	Signal Name	I/O	Function
41	EXTAL	I	11.89 MHz oscillation circuit input pin.
42	$\overline{\text{COSMO CS}}$	I	Chip select signal from mode control micro processor. V cycle "L" pulse.
43	SERIAL IN	I	Serial data input.
44	SERIAL OUT	O	Serial data output.
45	SCK	O	Serial clock output.
46			Not used.
47	PAC O/I SEL	O	Signal which controls the accessory pack pin signal direction. When "H", the signal is output from the main unit to the accessory pack.
48			Not used.
49			
50	AVSS		Analog port GND.
51	AVREF		Analog port reference voltage input (Connected to AVDD).
52	AVDD		Analog port power supply (+5V).
53			Not used.
54	END SENS	I	Tape end detecting signal. Normally "L". "H" pulse at tape end.
55	TOP SENS	I	Tape top detecting signal. Normally "L". "H" pulse at tape top.
56	$\overline{\text{DEW DET}}$	I	Condensation detection signal input. "L" when condensation occurred.
57	BATT SENSE	I	Battery voltage input for battery end detecting. The voltage divided into 2 by R114 and R115 is input.
58	ATF ERROR	I	ATF error, ATF lock error voltage input.
59	S REEL	I	S reel FG signal input.
60	T REEL	I	T reel FG signal input.
61			Not used.
62			
63			
64	VTR SYNC	I	Composite sync signal input separated from recording/playback Y signal.
65	SP/LP DET	I	Recording mode discrimination signal of the tape played back when CUE/REV/FF/REW. "H" when SP tape.
66	DRUM PG	I	Drum PG signal input. For drum phase servo. 33.3 msec. cycle "H" pulse when REC/PB.
67	DRUM FG	I	Drum FG signal input. For drum speed servo. 360 Hz square wave when REC/PB.
68	CAP FG	I	Capstan FG signal input. For capstan speed servo. Approx. 993 Hz in SP mode REC/PB, Approx. 497 Hz in LP mode REC/PB.
69			Not used.
70	TOP/END LED ON	O	LED ON/OFF signal for detecting tape top and end. "H" pulse during tape running.
71			Not used.
72			
73	CAP PWM	O	Capstan error signal output. 20.15 μsec. cycle PWM signal.
74	DRUM PWM	O	Drum error signal output. 20.15 μsec. cycle PWM signal.
75	CFG HMS	I	Capstan FG signal input for tape counter.
76			Not used.
77			
78			
79	$\overline{\text{LM LIM ON}}$	I	Loading motor driver current limiter detecting signal input. Normally "H". "L" when limiter is ON.
80			Not used.
81	DRUM ON	O	Drum motor ON/OFF control signal. Drum rotates at "H".
82	CLOG DET	I	Head clog detecting signal input. Normally "L".
83	REF PILOT	O	Reference pilot signal output for ATF servo. Synchronizes with drum rotation, switches four frequencies sequentially and outputs. f1=102.52 kHz, f2=118.95 kHz, f3=165.21 kHz, f4=148.69 kHz.
84			Not used.
85	NC		Connected to GND.
86	VSS		GND.
87	VDD		+5V power supply.
88	VPP		Connected to VDD.
89	DRUM ACC	O	Drum acceleration pulse output for fH correction. Normally "L".
90	DRUM BRK	O	Drum deceleration pulse output for fH correction. Normally "L".
91	SP/$\overline{\text{LP}}$ OUT	O	SP/LP switching signal output. SP: "H", LP: "L".
92	DOC MASK	O	DOC level switching signal output. "H" pulse which synchronizes with V sync during PB.
93			Not used.
94			
95	VA PB MODE	O	REC/PB switching signal output of video/audio circuit. "H" when PB.
96			Not used.
97	RF SWP(RF CONT)	O	PF switching pulse signal output. 30 Hz, duty cycle 50%.
98			Not used.
99	CAP ON	O	Capstan motor ON/OFF control signal output. Capstan rotates at "H".
100	CAP FWD/$\overline{\text{RVS}}$	O	Capstan rotational direction control signal output. FWD direction: "H".

-9. MODE CONTROL MICRO PROCESSOR (IC201 on MA-137 board: MB89092) PIN FUNCTIONS

Pin No.	Signal Name	I/O	Function
1	MOD0		Operation mode specification pin. Connected to GND.
2	MOD1		
3	X0		System clock oscillation circuit. 10 MHz.
4	X1		
5	VSS		GND pin.
6	$\overline{\text{RESET}}$	I	Reset input. "L" when resetting.
7	LINE I/O SEL	O	Input/output switching signal of line input/output pin. "H" only when external pack is not connected and the mode is not playback (input condition).
8	PACK DET	I	External pack connection signal. Standby switch is used (combined use) when camera pack is connected.
9	$\overline{\text{EJECT SW}}$	I	Cassette EJECT key input. "L" when key is pressed.
10	$\overline{\text{POWER SW}}$	I	POWER switch input. "L" when key is pressed.
11	BACK LIGHT ON	O	Liquid crystal display back light ON/OFF signal. "H" when back light ON.
12	START/STOP SW	I	Not used.
13	$\overline{\text{CC DOWN SW}}$	I	Cassette compartment lock switch input. "L" when lock.
14	CAMERA STBY SW	I	Not used.
15	BATT IN		Fixed at "H" level.
16	SYSTEM SYNC(PB V)	I	VD signal input from mechanism control micro processor. Timing reference of serial data communication. V cycle "L" pulse.
17	SERVO V	I	Not used.
18	$\overline{\text{LANC POWER ON}}$	I	POWER ON signal input by LANC. "L" when POWER is turned ON.
19	$\overline{\text{REC LED}}$	O	REC LED ON/OFF signal. REC: "L".
20	$\overline{\text{TALLY LED}}$	O	Camera Tally LED ON/OFF signal.
21			Not used.
22	$\overline{\text{PAUSE LED}}$	O	Not used.
23	$\overline{\text{POWER LED}}$	O	POWER LED ON/OFF signal. Power supply ON: "L".
24	$\overline{\text{SYSTEM RESET}}$	O	Reset signal to mechanism control micro processor. "L" when resetting.
25	AD GND		For AD reference. Connected to GND.
26	BATT IN		Fixed at "H" level.
27	MARKER SI	I	Not used.
28	MARKER SO	O	
29	MARKER SCK	O	
30	RMC IN	I	
31	$\overline{\text{MARKER RESET}}$	O	
32	MK REC MASK	O	
33	$\overline{\text{CS EEPROM}}$	O	Serial data communication chip select signal to EEPROM. V cycle "L" pulse.
34	$\overline{\text{CS VIDEO}}$	O	Serial data communication chip select signal to VIDEO IC. V cycle "L" pulse.
35	$\overline{\text{CS MARKER}}$	O	Not used.
36	$\overline{\text{CS LCD}}$	O	
37	D/A STB	O	D/A converter IC serial data transfer strobe signal. V cycle "H" pulse.
38	VIDEO MUTE	O	Video output mute signal. "H" when muting.
39	AUDIO MUTE	O	Audio output mute signal. "H" when muting.
40	OUTPUT SEL 1	O	Audio monitor switching output. Stereo, Main, Sub, Main/Sub, Monaural OUTPUT SEL 1: L, H, H, L, L OUTPUT SEL 2: L, H, L, L, L
41	OUTPUT SEL 2	O	

Pin No.	Signal Name	I/O	Function
42	MATRIX CONT 1	O	Audio matrix switching Stereo, Bilingual, Monaural MATRIX CONT 1: H, H, L MATRIX CONT 2: H, L, L
43	MATRIX CONT 2	O	
44	INSEL	O	Input switching signal. "H" during line input.
45	LINE STEREO	I	Stereo/monaural discrimination input of line input pin. "H" when plug is inserted in audio input pin (right).
46	$\overline{\text{SP ON}}$	O	Speaker output ON/OFF signal. Speaker ON: "L".
47	VCC		Power supply pin.
48	SEG15	O	Not used.
49	SEG14	O	
50	SEG13	O	
51	SEG12	O	
52	SEG11	O	
53	SEG10	O	
54	SEG09	O	
55	SEG08	O	
56	VSS		GND pin.
57	SEG07	O	Not used.
58	SEG06	O	
59	SEG05	O	
60	SEG04	O	
61	SEG03	O	
62	SEG02	O	
63	SEG01	O	
64	SEG00	O	
65	V3		
66	V2		
67	V1		
68	V0		
69	COM0	O	
70	COM1	O	
71	COM2	O	
72	COM3	O	
73	CS CG	O	Character generator serial data communication chip select signal. V cycle "L" pulse.
74	CS COSMO	O	Serial data communication chip select signal to mechanism control micro processor. V cycle "L" pulse.
75	SI BUS	I	Serial data communication data input. V cycle "L" pulse row.
76	SO BUS	O	Serial data communication data output. V cycle "L" pulse row.
77	SCK	O	Clock for serial data communication.
78			Not used.
79	POWER ON	O	Power supply ON/OFF control signal. Power supply ON: "H".
80	$\overline{\text{MONITOR ON}}$	O	External monitor power supply ON/OFF control signal. Power supply ON: "L".
81	AVSS		GND pin.
82	KEY AD IN 0	I	Key input signal. 0V: REC, 0.9V: STOP, 1.5V: FF, 2.2V: PB, 2.8V: SLOW, 5V: No input.
83	KEY AD IN 1	I	Key input signal. 0V: PAUSE, 0.9V: REW, 1.5V: COUNTER RESET, 2.2V: DATA SCREEN, 5V: No input.

Pin No.
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Signal Name	I/O	Function
ATRIX CONT 1	O	Audio matrix switching Stereo Bilingual Monaural MATRIX CONT 1 H H L MATRIX CONT 2 H L L
ATRIX CONT 2	O	
SEL	O	Input switching signal. "H" during line input.
NE STEREO	I	Stereo/monaural discrimination input of line input pin. "H" when plug is inserted in audio input pin (right).
$\overline{\text{ON}}$	O	Speaker output ON/OFF signal. Speaker ON: "L".
C		Power supply pin.
G15	O	Not used.
G14	O	
G13	O	
G12	O	
G11	O	
G10	O	
G09	O	
G08	O	
S		GND pin.
G07	O	Not used.
G06	O	
G05	O	
G04	O	
G03	O	
G02	O	
G01	O	
G00	O	
3		
2		
1		
0		
M0	O	
M1	O	
M2	O	
M3	O	
CG	O	Character generator serial data communication chip select signal. V cycle "L" pulse.
COSMO	O	Serial data communication chip select signal to mechanism control micro processor. V cycle "L" pulse.
BUS	I	Serial data communication data input. V cycle "L" pulse row.
BUS	O	Serial data communication data output. V cycle "L" pulse row.
K	O	Clock for serial data communication.
		Not used.
OWER ON	O	Power supply ON/OFF control signal. Power supply ON: "H".
$\overline{\text{ONITOR ON}}$	O	External monitor power supply ON/OFF control signal. Power supply ON: "L".
VSS		GND pin.
EY AD IN 0	I	Key input signal. 0V: REC, 0.9V: STOP, 1.5V: FF, 2.2V: PB, 2.8V: SLOW, 5V: No input.
EY AD IN 1	I	Key input signal. 0V: PAUSE, 0.9V: REW, 1.5V: COUNTER RESET, 2.2V: DATA SCREEN, 5V: No input.

Pin No.	Signal Name	I/O	Function
84	KEY AD IN 2	I	Key input signal. 0V: VOLUME+, 0.9V: VOLUME–, 1.5V: BRIGHT +, 2.2V: BRIGHT –, 2.8V: MENU, 3.4V: ENTER, 5V: No input.
85	KEY AD IN 3	I	Not used.
86	EXT CTL	I	External pack control signal input.
87	ST/BI DET	I	Playback AFM STEREO/BILINGUAL detection input. 0V: Stereo, 2V: Monaural, 5V: Bilingual
88	P/N443/P60	I	Not used.
89	AUDIO SEL	I	
90	AVCC		Power supply pin.
91	$\overline{\text{EXT POWER ON}}$	O	External pack power supply ON/OFF control signal. Power supply ON: "L".
92	E MODE	O	Normal/Hi8 switching signal. "H" when playing back a Hi8 tape recorded.
93	LINE AU BI/ST	I	Not used.
94	LCD ON/OFF	I	Liquid crystal display section open/close signal input. "H" when open.
95	LANC IN	I	LANC data input. V cycle "H" pulse row.
96	LANC OUT	O	LANC data output. V cycle "H" pulse row.
97			Not used.
98			Fixed at "H" level.
99	CL1		Sub-clock oscillation circuit. 32 kHz.
100	CL0		

3-10. INTERFACE

3-10-1. System Control – Video and Audio Block Interfaces (MA-137 Board)

Signal Name	I/O	Pin No.	VTR Mode												CAMERA Mode	
			STOP	FF	REW	FR SEARCH		PB	PICTURE SEARCH		PB· PAUSE	SLOW	REC	REC PAUSE	STAND BY	REC
						CUE	REVIEW		CUE	REVIEW						
SP/$\overline{\text{LP}}$	O	IC101(91)	*1	H	H	*2	*2	*2	*2	*2	*1	*1	*14	H/L	H/L	*14
VA PB MODE	O	IC101(95)	L	L	L	H	H	H	H	H	H	H	L	L	L	L
JOG VD	O	IC101③	L	L	L	*5	*5	L	*5	*5	*5	*5	L	L	L	L
RP PB MODE	O	IC101①	H	H	H	H	H	H	H	H	H	H	L	H	H	L
$\overline{\text{FE ON}}$	O	IC101②	H	H	H	H	H	H	H	H	H	H	L	H	H	L
RF SWP	O	IC101(97)	L	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7
JOG	O	IC101④	L	L	L	H	H	L	H	H	H	H	L	L	L	L
SP/$\overline{\text{LP}}$ DET	I	IC101(65)	L	*10	*10	*10	*10	L	*10	*10	*10		H	H	H	H
CLOG DET	I	IC101(82)	H	*11	*11	*11	*11	*11	*11	*11	*11	*11	H	*11	*11	H
VTR SYNC	I	IC101(64)	*12	*12	*12	*12	*12	*12	*12	*12	*12	*12	*12	*12	*12	*12
DOC MASK	O	IC101(92)	L	L	L	L	L	*13	L	L	L	L	L	L	L	L
VIDEO MUTE *15	O	IC101㊳	L	L	L	L	L	L	L	L	L	L	L	L	L	L
STILL·SLOW	O	IC101㉖	L	L	L	L	L	L	L	L	H	H	L	L	L	L
AUDIO MUTE	O	IC201㊴	L	L	L	H	H	L	H	H	H	H	L	L	L	L
LINE I/$\overline{\text{O}}$ SEL	O	IC201⑦	H	H	H	L	L	L	L	L	L	L	H	H	L	L
CS VIDEO	O	IC201㉞	V cycle "L" pulse													
$\overline{\text{D/A STB}}$	O	IC201㊲	V cycle "H" pulse													
SO BUS	O	IC201(76)	V cycle pulse row													
SCK	O	IC201(77)	V cycle "L" pulse row													

*1. Outputs the discrimination results of the mode just before. SP mode: "H", LP mode: "L".

*2. Outputs the discrimination results of the recording mode of the tape played back. SP mode: "H", LP mode: "L".

*5. False VD signal.

*7. 50% pulse of 30 Hz duty (synchronizes with drum rotation)

*10. "H" at SP recorded section of tape, "L" at LP recorded section.

*11. "H" at unrecorded section of tape or drop out section. Head clog detection input.

*12. Composite sync signal input separated from line input video signal, camera video signal or playback video signal. (Polarity +)

*13. 60 Hz pulse which is "H" for 1.3 msec. from the changing point of RF SWP.

*14. Changes by SP/LP switching. SP mode: "H", LP mode: "L".

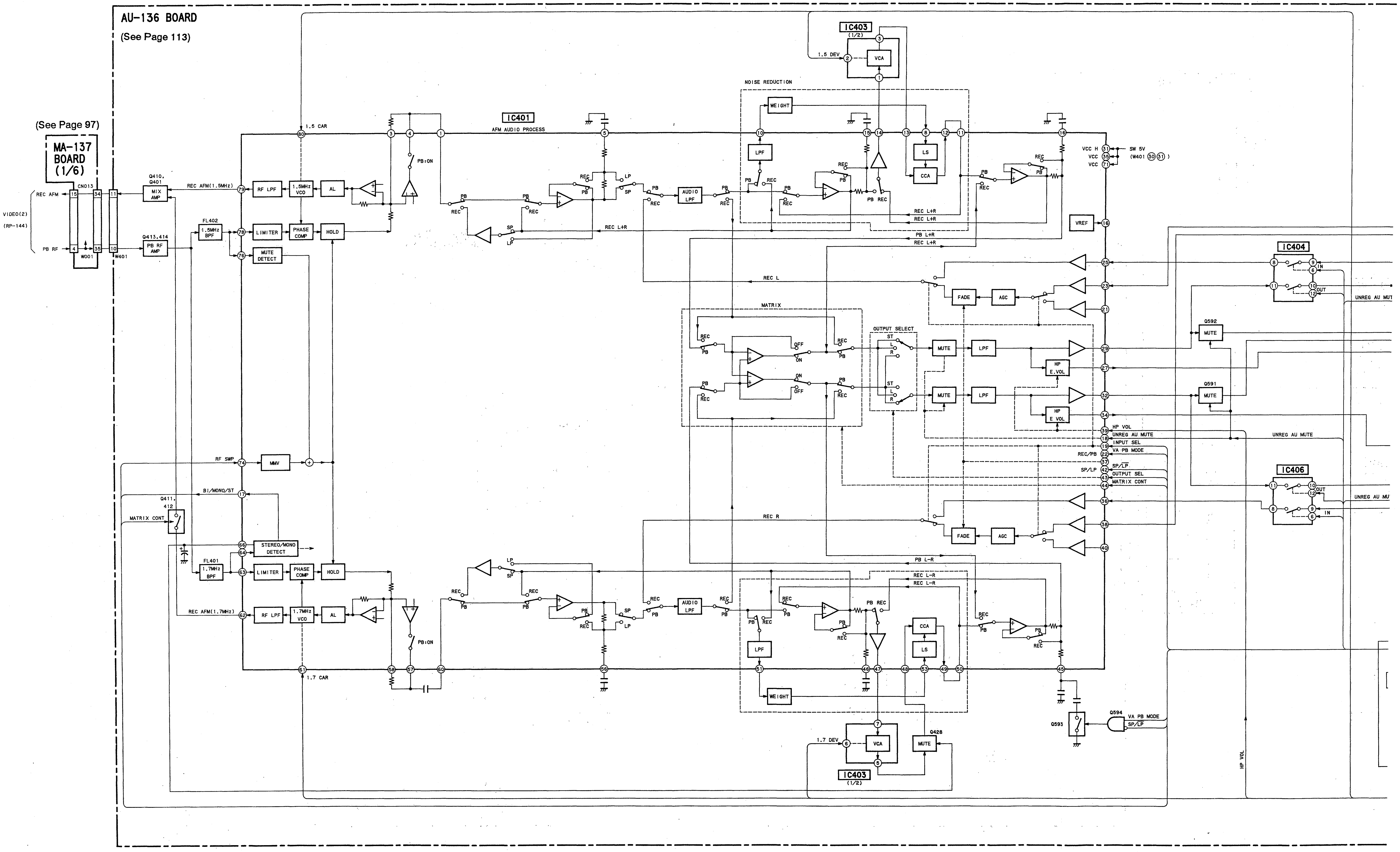
*15. "H" when the mode shifts from STOP to PB.

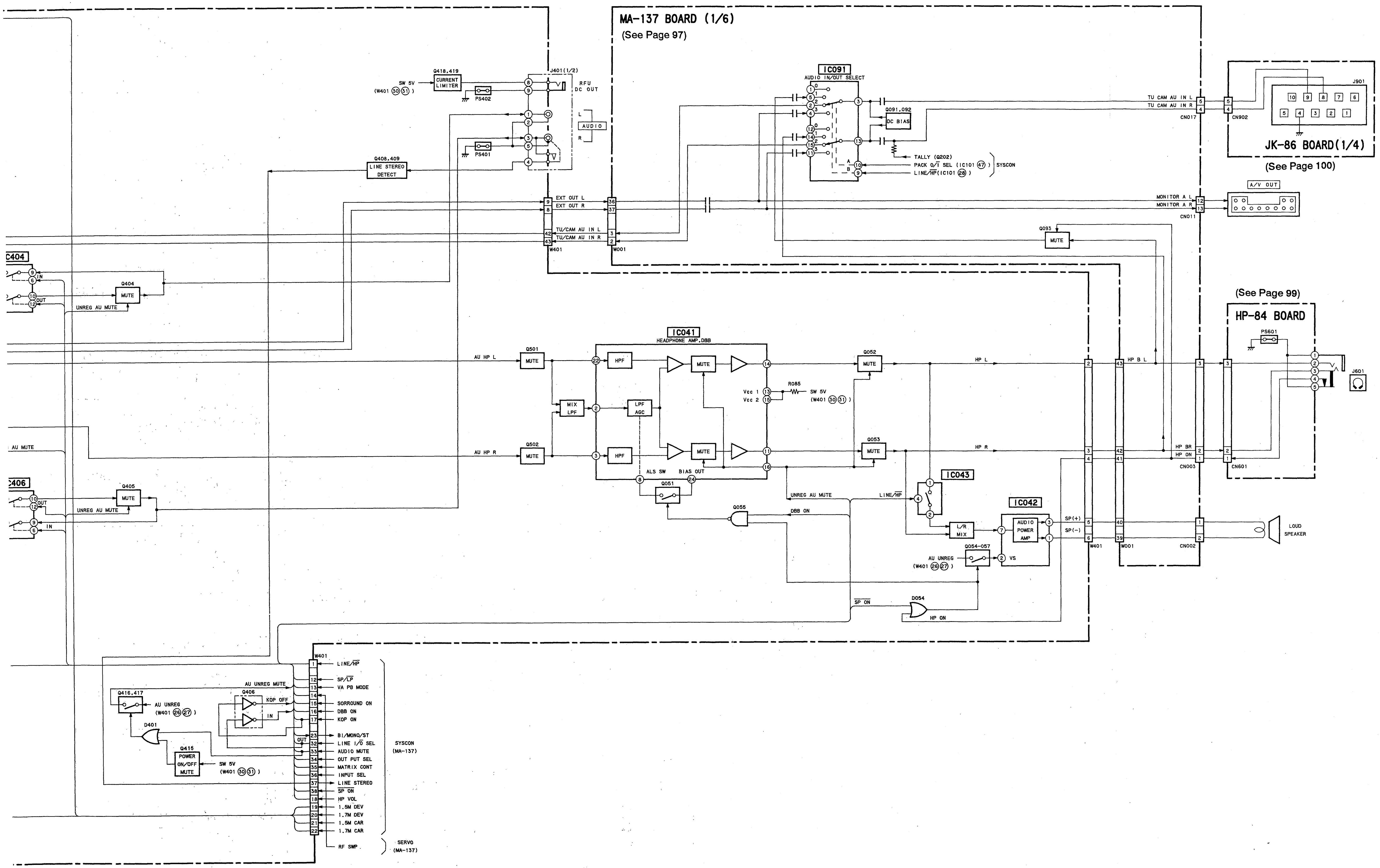
3-10-2. Mechanism Control – Servo Block Interface (MA-137 Board)

Signal Name	I/O	Pin No.	VTR Mode												CAMERA Mode	
			STOP	FF	REW	FR SEARCH		PB	PICTURE SEARCH		PB• PAUSE	SLOW	REC	REC PAUSE	STAND BY	REC
						CUE	REVIEW		CUE	REVIEW						
T.REEL FG	I	IC101 (60)	–	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	–	–	*1
S.REEL FG	I	IC101 (59)	–	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	–	–	*1
ATF ERROR	I	IC101 (58)	–	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2
DRUM PG	I	IC101 (66)	–	*3	*3	*3	*3	*3	*3	*3	*3	*3	*3	*3	*3	*3
DRUM FG	I	IC101 (67)	–	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4
CAP FG/ CFG HMS	I	IC101 (68), (75)	–	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5
CAP ON	O	IC101 (99)	L	H	H	H	H	H	H	H	L	*8	H	L	L	H
REF PILOT	O	IC101 (83)	*7	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6
RP PB MODE	O	IC101 ①	H	H	H	H	H	H	H	H	H	H	L	H	H	L
DRUM FWD/$\overline{\text{RVS}}$ *10	O	IC101 ㉝	H	H	H	H	H	H	H	H	H	H	H	H	H	H
CAP FWD/$\overline{\text{RVS}}$	O	IC101 (100)	L	H	L	H	L	H	H	L	L	*8	H	L	L	H
DRUM PWM	O	IC101 (74)	*9	*9	*9	*9	*9	*9	*9	*9	*9	*9	*9	*9	*9	*9
CAP PWM	O	IC101 (73)	L	*9	*9	*9	*9	*9	*9	*9	L	*9	*9	L	L	*9
$\overline{\text{LM LIM CONT}}$ *11	O	IC101 ㉛	L	L	L	L	L	L	L	L	L	L	L	L	L	L
DRUM ON *12	O	IC101 (81)	L	H	H	H	H	H	H	H	H	H	H	H	H	H
DRUM ACC	O	IC101 (89)	L	L	L	L	L	L	L	L	L	*8	L	L	L	L
DRUM BRK	O	IC101 (90)	L	L	L	L	L	L	L	L	L	*8	L	L	L	L

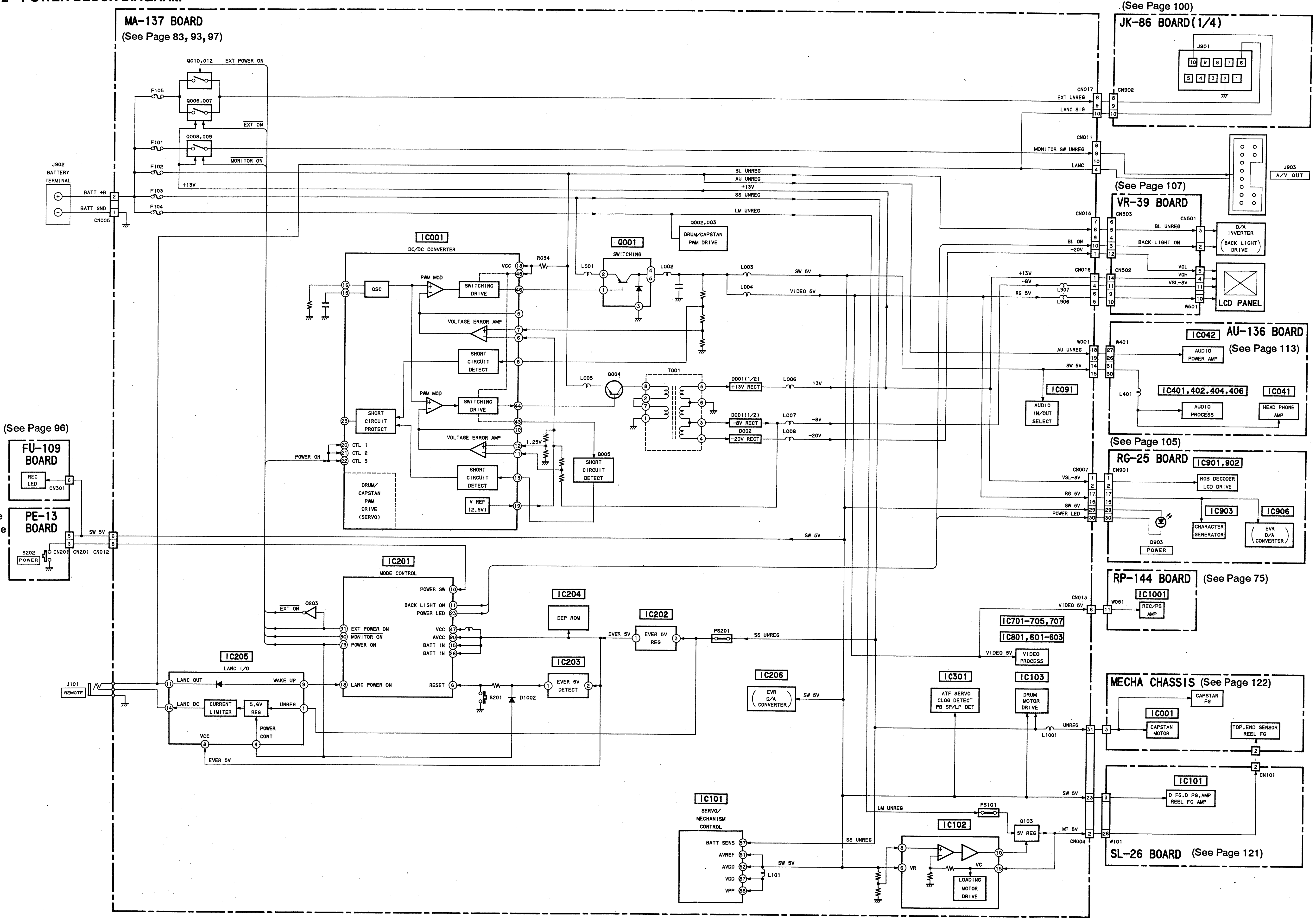
*1. A pulse whose amplitude has been modulated by the rotation of the reel is input. (200 msec. cycle during REC/PB).
*2. ATF error voltage input.
*3. One PG pulse is input with one drum rotation. Approx. 30 Hz.
*4. Six FG pulses are input with one drum rotation. Approx. 360 Hz.
*5. 520 FG pulses are input with one capstan rotation. Approx. 993 Hz during REC/PB (SP).
*6. Outputs four frequencies synchronized with the rotation of the drum. f_1=102.54 kHz, f_2=118.95 kHz, f_3=165.21 kHz, f_4=148.69 kHz.
*7. Outputs f_2 (118.95 kHz).
*8. "H" pulse when the tape is run.
*9. 21.5 μsec. cycle PWM signal.
*10. Normally "H". Temporarily "L" only during load/unload (drum reversal).
*11. Temporarily "H" only during cassette loading (To prevent your finger from being caught).
*12. H level is approx. 1.3 Vdc.

3-11. AUDIO BLOCK DIAGRAM

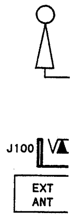

AU-136 BOARD
(See Page 113)
(See Page 97)
MA-137 BOARD (1/6)
CN013
W001
W401
REC AFM
PB RF
VIDEO(2)
(RP-144)
Q410, Q401
MIX AMP
Q413,414
PB RF AMP
REC AFM(1.5MHz)
FL402
1.5MHz BPF
RF LPF
1.5MHz VCO
AL
LIMITER
PHASE COMP
HOLD
MUTE DETECT
1.5 CAR
IC401
AFM AUDIO PROCESS
PB:ON
PB
REC
LP
SP
REC L+R
AUDIO LPF
IC403
(1/2)
1.5 DEV
VCA
NOISE REDUCTION
WEIGHT
LPF
LS
CCA
PB REC
PB L+R
VREF
VCC H
VCC
SW 5V
(W401 ㉚ ㉛)
REC L
FADE
AGC
IC404
IN
OUT
UNREG AU MUTE
MATRIX
OFF
ON
OUTPUT SELECT
ST
L
R
MUTE
HP E.VOL
Q592
Q591
HP VOL
INPUT SEL
VA PB MODE
REC/PB
SP/LP
OUTPUT SEL
MATRIX CONT
IC406
REC R
RF SWP
MMV
BI/MONO/ST
Q411, 412
MATRIX CONT
STEREO/MONO DETECT
FL401
1.7MHz BPF
REC AFM(1.7MHz)
1.7MHz VCO
1.7 CAR
PB L-R
REC L-R
1.7 DEV
Q428
Q593
Q594


MA-137 BOARD (1/6)
(See Page 97)
IC091
AUDIO IN/OUT SELECT
Q091,092
DC BIAS
TALLY (Q202)
PACK 0/I SEL (IC101 47)
LINE/HP(IC101 28)
SYSCON
TU CAM AU IN L
TU CAM AU IN R
CN017
CN902
J901
JK-86 BOARD(1/4)
(See Page 100)
A/V OUT
MONITOR A L
MONITOR A R
CN011
Q093
MUTE
J401(1/2)
RFU
DC OUT
AUDIO
Q418,419
CURRENT LIMITER
SW 5V
(W401 30 31)
PS402
PS401
Q408,409
LINE STEREO DETECT
EXT OUT L
EXT OUT R
TU/CAM AU IN L
TU/CAM AU IN R
W401
W001
IC404
IN
OUT
Q404
MUTE
UNREG AU MUTE
IC041
HEADPHONE AMP,DBB
AU HP L
AU HP R
Q501
Q502
MUTE
MIX LPF
HPF
LPF AGC
Vcc 1
Vcc 2
R085
SW 5V
(W401 30 31)
ALS SW
BIAS OUT
Q051
Q052
Q053
HP L
HP R
Q055
DBB ON
UNREG AU MUTE
LINE/HP
IC043
IC042
L/R MIX
AUDIO POWER AMP
SP(+)
SP(-)
VS
Q054-057
AU UNREG
(W401 26 27)
D054
SP ON
HP ON
(See Page 99)
HP-84 BOARD
PS601
J601
HP B L
HP BR
HP ON
CN003
CN601
CN002
LOUD SPEAKER
AU MUTE
IC406
Q405
Q416,417
AU UNREG
(W401 26 27)
AU UNREG MUTE
Q406
KOP OFF
IN
OUT
D401
Q415
POWER ON/OFF MUTE
SW 5V
(W401 30 31)
LINE/HP
SP/LP
VA PB MODE
SORROUND ON
DBB ON
KOP ON
BI/MONO/ST
LINE I/O SEL
AUDIO MUTE
OUT PUT SEL
MATRIX CONT
INPUT SEL
LINE STEREO
SP ON
HP VOL
1.5M DEV
1.7M DEV
1.5M CAR
1.7M CAR
SYSCON
(MA-137)
RF SWP
SERVO
(MA-137)

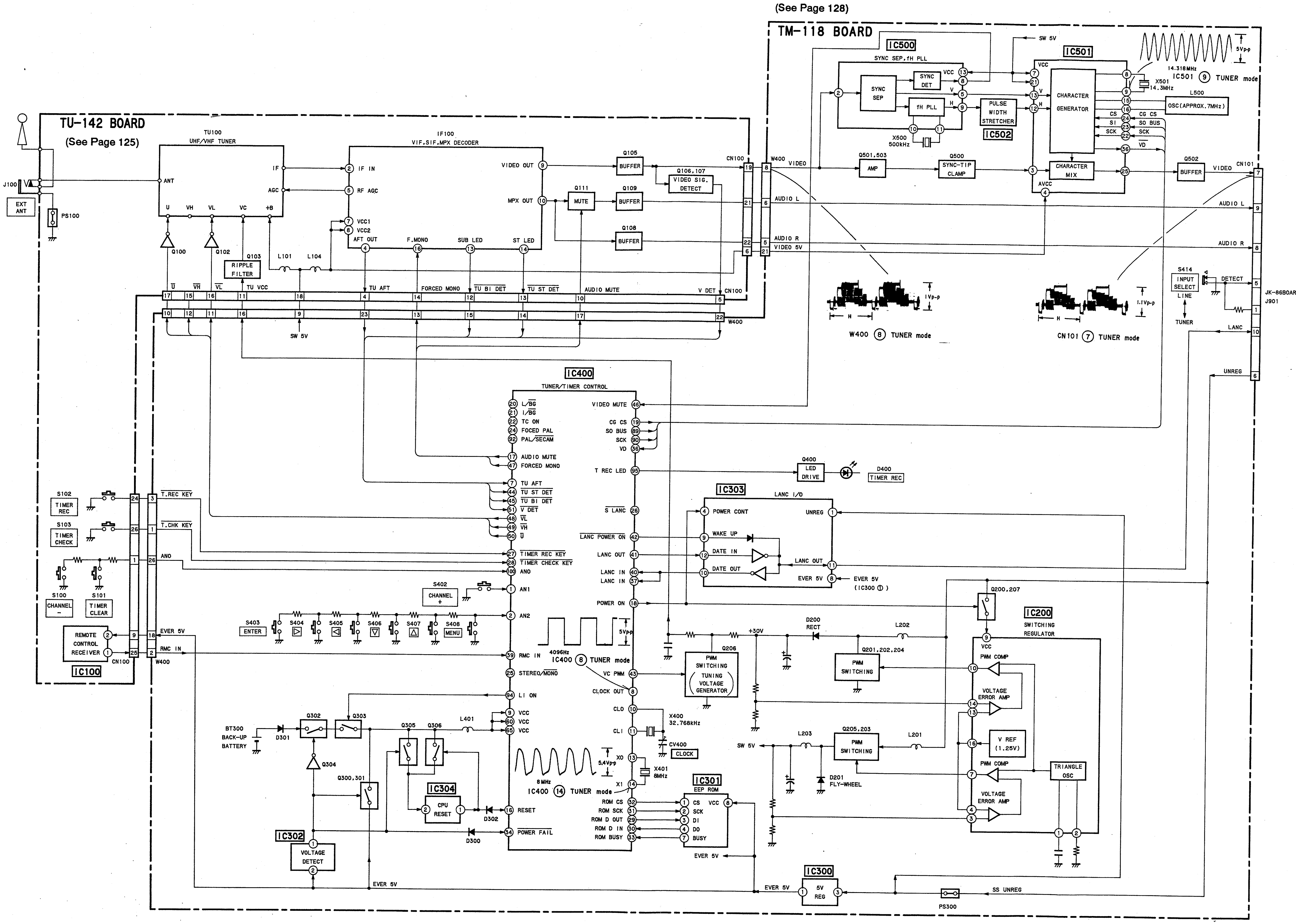
3-12 POWER BLOCK DIAGRAM


MA-137 BOARD
(See Page 83, 93, 97)
J902
BATTERY
TERMINAL
BATT +B
BATT GND
CN005
F105
F101
F102
F103
F104
Q010,012
EXT POWER ON
Q006,007
EXT ON
Q008,009
MONITOR ON
+13V
BL UNREG
AU UNREG
+13V
SS UNREG
LM UNREG
Q002,003
DRUM/CAPSTAN
PWM DRIVE
IC001
DC/DC CONVERTER
OSC
PWM MOD
SWITCHING
DRIVE
VOLTAGE ERROR AMP
SHORT
CIRCUIT
DETECT
SHORT
CIRCUIT
PROTECT
CTL 1
CTL 2
CTL 3
POWER ON
DRUM/
CAPSTAN
PWM
DRIVE
(SERVO)
V REF
(2.5V)
VCC
R034
1.25V
Q001
SWITCHING
L001
L002
L003
L004
SW 5V
VIDEO 5V
L005
Q004
T001
Q005
SHORT
CIRCUIT
DETECT
D001(1/2)
+13V RECT
D001(1/2)
-8V RECT
D002
-20V RECT
L006
L007
L008
13V
-8V
-20V
IC201
MODE CONTROL
POWER SW
BACK LIGHT ON
POWER LED
EXT POWER ON
MONITOR ON
POWER ON
VCC
AVCC
BATT IN
BATT IN
LANC POWER ON
RESET
Q203
EXT ON
IC204
EEP ROM
IC202
EVER 5V
REG
EVER 5V
PS201
SS UNREG
IC203
EVER 5V
DETECT
S201
D1002
IC205
LANC I/O
LANC OUT
WAKE UP
LANC DC
CURRENT
LIMITER
5.6V
REG
UNREG
POWER
CONT
VCC
EVER 5V
J101
REMOTE
IC206
EVR
D/A
CONVERTER
SW 5V
IC101
SERVO/
MECHANISM
CONTROL
BATT SENS
AVREF
AVDD
VDD
VPP
SW 5V
L101
SS UNREG
LM UNREG
PS101
Q103
5V REG
MT 5V
IC102
VR
VC
LOADING
MOTOR
DRIVE
IC301
ATF SERVO
CLOG DETECT
PB SP/LP DET
IC103
DRUM
MOTOR
DRIVE
UNREG
L1001
SW 5V
IC701-705,707
IC801,601-603
VIDEO 5V
VIDEO
PROCESS
IC091
AUDIO
IN/OUT
SELECT
(See Page 96)
FU-109
BOARD
REC
LED
CN301
(See
Page
96)
PE-13
BOARD
S202
POWER
CN201
CN201
CN012
SW 5V
CN017
EXT UNREG
LANC SIG
CN011
MONITOR SW UNREG
LANC
CN015
BL ON
-20V
CN016
+13V
-8V
RG 5V
L907
L906
W001
AU UNREG
SW 5V
CN007
VSL-8V
RG 5V
SW 5V
POWER LED
CN013
VIDEO 5V
CN004
(See Page 100)
JK-86 BOARD(1/4)
J901
CN902
J903
A/V OUT
(See Page 107)
VR-39 BOARD
CN503
CN501
BL UNREG
BACK LIGHT ON
D/A
INVERTER
(BACK LIGHT
DRIVE)
CN502
VGL
VGH
VSL-8V
W501
LCD PANEL
IC042
AU-136 BOARD
(See Page 113)
W401
AUDIO
POWER AMP
L401
IC401,402,404,406
AUDIO
PROCESS
IC041
HEAD PHONE
AMP
(See Page 105)
RG-25 BOARD
IC901,902
CN901
RGB DECODER
LCD DRIVE
IC903
CHARACTER
GENERATOR
IC906
EVR
D/A
CONVERTER
D903
POWER
RP-144 BOARD
(See Page 75)
W051
IC1001
REC/PB
AMP
MECHA CHASSIS (See Page 122)
IC001
CAPSTAN
MOTOR
CAPSTAN
FG
TOP,END SENSOR
REEL FG
CN101
IC101
D FG,D PG,AMP
REEL FG AMP
W101
SL-26 BOARD
(See Page 121)

3-13. TU

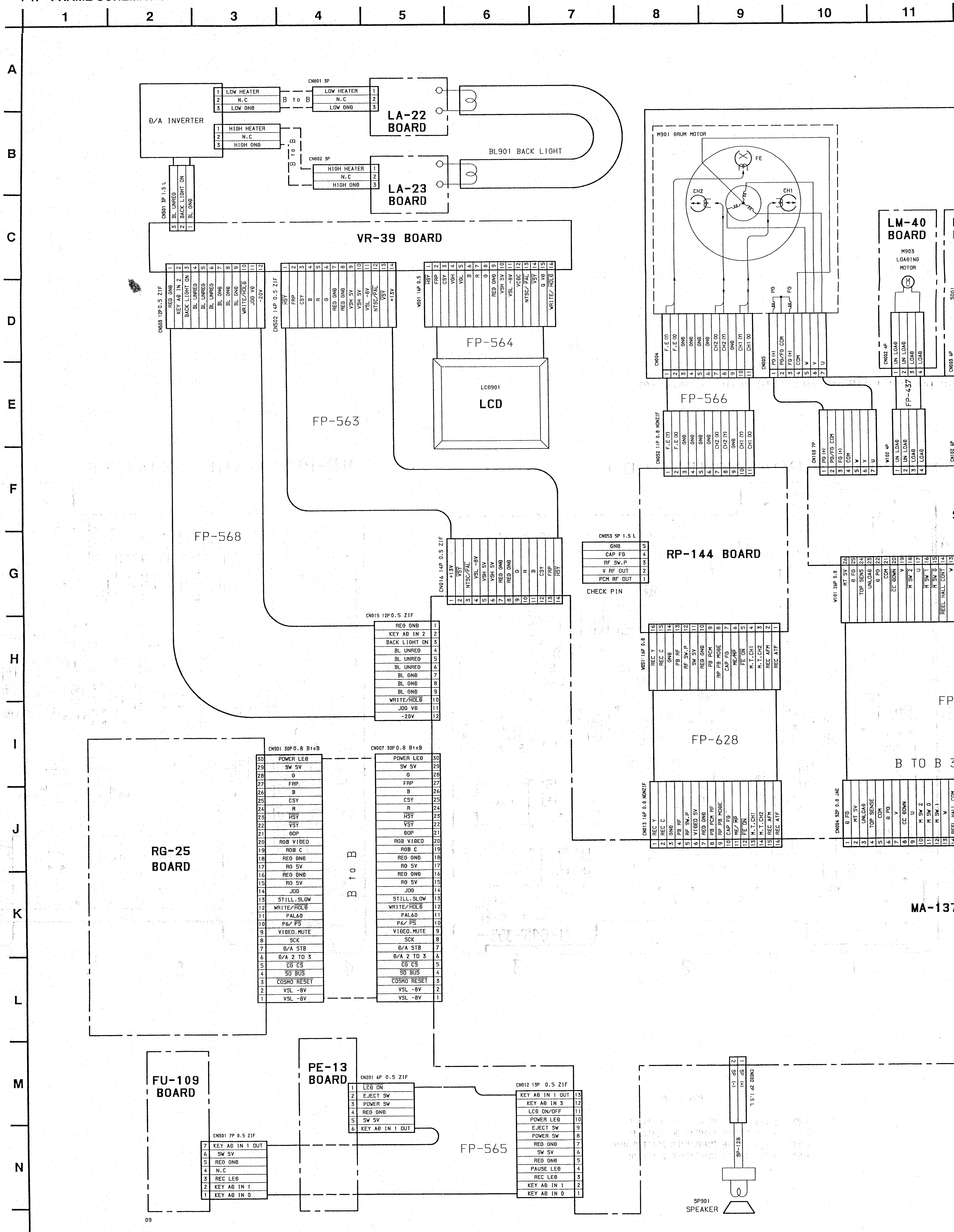

J100
EXT
ANT

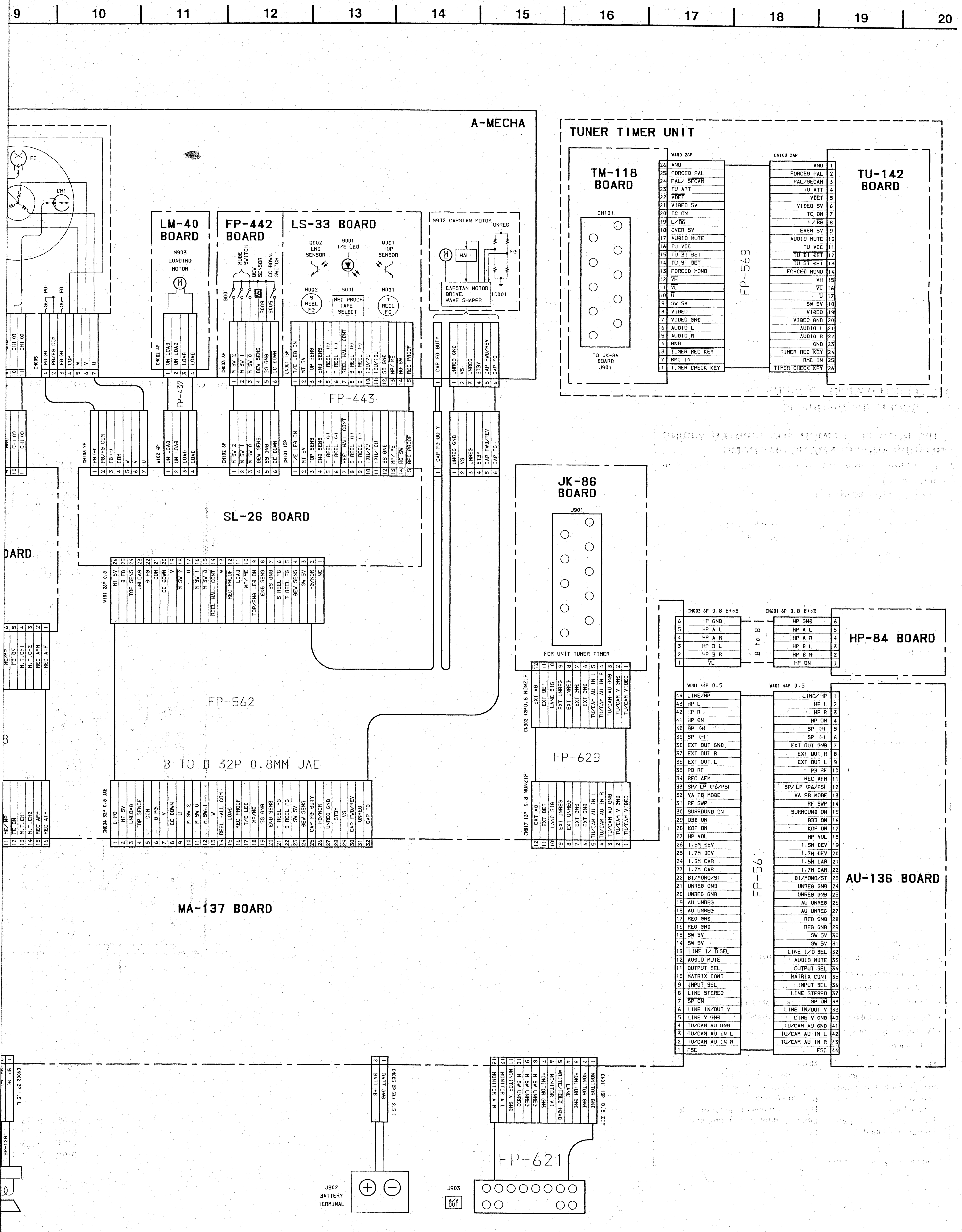
3-13. TUNER/TIMER BLOCK DIAGRAM


(See Page 128)
TM-118 BOARD
TU-142 BOARD
(See Page 125)
J100
EXT ANT
PS100
TU100
UHF/VHF TUNER
ANT
IF
AGC
U VH VL VC +B
IF100
VIF,SIF,MPX DECODER
IF IN
RF AGC
VCC1
VCC2
AFT OUT
F.MONO
SUB LED
ST LED
VIDEO OUT
MPX OUT
Q100
Q102
Q103
RIPPLE FILTER
L101
L104
Q105 BUFFER
Q106,107 VIDEO SIG. DETECT
Q111 MUTE
Q109 BUFFER
Q108 BUFFER
CN100
W400
TU VCC
TU AFT
FORCED MONO
TU BI DET
TU ST DET
AUDIO MUTE
V DET
SW 5V
VIDEO
AUDIO L
AUDIO R
VIDEO 5V
IC500
SYNC SEP,fH PLL
SYNC SEP
SYNC DET
fH PLL
X500 500kHz
Q501,503 AMP
Q500 SYNC-TIP CLAMP
PULSE WIDTH STRETCHER
IC502
IC501
CHARACTER GENERATOR
CHARACTER MIX
AVCC
CS SI SCK
CG CS
SO BUS
SCK
VD
X501 14.3MHz
14.318MHz
IC501 ⑨ TUNER mode
5Vp-p
L500
OSC(APPROX.7MHz)
Q502 BUFFER
CN101
JK-86BOARD J901
S414 INPUT SELECT
LINE
TUNER
DETECT
LANC
UNREG
1Vp-p
W400 ⑧ TUNER mode
1.1Vp-p
CN101 ⑦ TUNER mode
IC400
TUNER/TIMER CONTROL
L/BG
I/BG
TC ON
FOCED PAL
PAL/SECAM
AUDIO MUTE
FORCED MONO
TU AFT
TU ST DET
TU BI DET
V DET
VL
VH
U
TIMER REC KEY
TIMER CHECK KEY
ANO
AN1
AN2
RMC IN
STEREO/MONO
LI ON
VCC
RESET
POWER FAIL
VIDEO MUTE
CG CS
SO BUS
SCK
VD
T REC LED
S LANC
LANC POWER ON
LANC OUT
LANC IN
POWER ON
4096Hz
IC400 ⑧ TUNER mode
5Vp-p
VC PWM
CLOCK OUT
CLO
CLI
XO
XI
X400 32.768kHz
CV400 CLOCK
X401 8MHz
5.4Vp-p
8MHz
IC400 ⑭ TUNER mode
ROM CS
ROM SCK
ROM D OUT
ROM D IN
ROM BUSY
IC301 EEP ROM
CS VCC SCK DI DO BUSY
EVER 5V
Q400 LED DRIVE
D400 TIMER REC
IC303
LANC I/O
POWER CONT
WAKE UP
DATE IN
DATE OUT
UNREG
LANC OUT
EVER 5V
EVER 5V (IC300 ①)
S102 TIMER REC
S103 TIMER CHECK
T.REC KEY
T.CHK KEY
S100 CHANNEL −
S101 TIMER CLEAR
S402 CHANNEL +
S403 ENTER
S404
S405
S406
S407
S408 MENU
REMOTE CONTROL RECEIVER
IC100
RMC IN
BT300 BACK-UP BATTERY
D301
Q302
Q303
Q304
Q305
Q306
L401
Q300,301
IC304 CPU RESET
D302
D300
IC302 VOLTAGE DETECT
Q206 PWM SWITCHING
TUNING VOLTAGE GENERATOR
+30V
D200 RECT
L202
Q201,202,204 PWM SWITCHING
Q200,207
IC200 SWITCHING REGULATOR
VCC
PWM COMP
VOLTAGE ERROR AMP
V REF (1.25V)
TRIANGLE OSC
SW 5V
L203
Q205,203 PWM SWITCHING
L201
D201 FLY-WHEEL
IC300 5V REG
PS300
SS UNREG

SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM


1
2
3
4
5
6
7
8
9
10
11
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
Ð/A INVERTER
LOW HEATER
N.C
LOW GNÐ
HIGH HEATER
N.C
HIGH GNÐ
B to B
CN801 3P
LA-22 BOARD
CN802 3P
LA-23 BOARD
BL901 BACK LIGHT
CN501 3P 1.5 L
BL UNREG
BACK LIGHT ON
BL GNÐ
VR-39 BOARD
CN503 12P 0.5 ZIF
REG GNÐ
KEY AÐ IN 2
BACK LIGHT ON
BL UNREG
BL GNÐ
WRITE/HOLÐ
JOG VÐ
-20V
CN502 14P 0.5 ZIF
HSY
FRP
CSY
B
R
G
REG GNÐ
VSH 5V
VSL -8V
NTSC/PAL
VSY
+13V
W501 16P 0.5
VGH
VGL
VCBC
Q VÐ
WRITE/ HOLÐ
FP-564
LC0901
LCD
FP-563
FP-568
CN016 14P 0.5 ZIF
CN015 12P 0.5 ZIF
CN053 5P 1.5 L
GNÐ
CAP FG
RF SW.P
V RF OUT
PCM RF OUT
CHECK PIN
RP-144 BOARD
W051 16P 0.8
REC Y
REC C
GNÐ
PB RF
RF SW.P
SW 5V
VIDEO 5V
REG GNÐ
PB PCM
PB PCM RF
RP PB MODE
CAP FG
ME/MP
FE ON
M.T.CH1
M.T.CH2
REC AFM
REC ATF
FP-628
CN013 16P 0.8 NONZIF
M901 ÐRUM MOTOR
FE
CH2
CH1
PG
FG
CN004
F.E (Y)
F.E (X)
CH2 (X)
CH2 (Y)
CH1 (Y)
CH1 (X)
CN005
PG (+)
PG/FG COM
FG (+)
COM
W
V
U
FP-566
CN052 11P 0.8 NONZIF
CN103 7P
LM-40 BOARD
M903 LOADING MOTOR
CN002 4P
UN LOAÐ
LOAÐ
FP-437
W102 4P
CN102 6P
CN003 6P
S001
W101 26P 0.8
MT 5V
Ð FG
TOP SENS
UNLOAÐ
Ð PG
CC ÐOWN
M SW 2
M SW 1
M SW 0
REEL HALL CONT
CN004 32P 0.8 JAE
TOP SENSE
REEL HALL COM
B TO B
FP
MA-137
RG-25 BOARD
CN901 30P 0.8 BtoB
CN007 30P 0.8 BtoB
POWER LEÐ
ÐOP
RGB VIDEO
RGB C
RG 5V
JOG
STILL.SLOW
PAL60
P6/ P5
VIDEO.MUTE
SCK
Ð/A STB
Ð/A 2 TO 3
CG CS
SO BUS
COSMO RESET
VSL -8V
FU-109 BOARD
CN301 7P 0.5 ZIF
KEY AÐ IN 1 OUT
N.C
REC LEÐ
KEY AÐ IN 1
KEY AÐ IN 0
09
PE-13 BOARD
CN201 6P 0.5 ZIF
LCÐ ON
EJECT SW
POWER SW
FP-565
CN012 13P 0.5 ZIF
KEY AÐ IN 3
LCÐ ON/OFF
PAUSE LEÐ
CN002 2P 1.5 L
SP (-)
SP (+)
SP-128
SP901 SPEAKER


9
10
11
12
13
14
15
16
17
18
19
20
A-MECHA
LM-40 BOARD
M903 LOADING MOTOR
FP-442 BOARD
MODE SWITCH
DEW SENSOR
CC DOWN SWITCH
LS-33 BOARD
Q002 END SENSOR
D001 T/E LED
Q001 TOP SENSOR
H002 S REEL FG
S001 REC PROOF TAPE SELECT
H001 T REEL FG
M902 CAPSTAN MOTOR
CAPSTAN MOTOR DRIVE, WAVE SHAPER
IC001
HALL
UNREG
FG
CN005
CN002 4P
CN003 6P
CN001 15P
FP-437
FP-443
CN103 7P
W102 4P
CN102 6P
CN101 15P
SL-26 BOARD
W101 26P 0.8
FP-562
B TO B 32P 0.8MM JAE
CN004 32P 0.8 JAE
MA-137 BOARD
TUNER TIMER UNIT
TM-118 BOARD
CN101
TO JK-86 BOARD J901
W400 26P
FP-569
CN100 26P
TU-142 BOARD
JK-86 BOARD
J901
FOR UNIT TUNER TIMER
CN902 12P 0.8 NONZIF
FP-629
CN017 12P 0.8 NONZIF
HP-84 BOARD
CN003 6P 0.8 B to B
CN601 6P 0.8 B to B
B to B
W001 44P 0.5
W401 44P 0.5
FP-561
AU-136 BOARD
CN002 2P 1.5 L
SP-128
CN005 2P ELD 2.5 1
BATT GND
BATT +B
J902 BATTERY TERMINAL
CN011 13P 0.5 ZIF
FP-621
J903

4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this , the necessary note is printed in each block.)

- **For printed wiring boards.**
- ○ : Through hole
- ▨ : Pattern from the side which enables seeing.
  (The other layer's patterns are not indicated.)
- Circled numbers refer to waveforms.

* Caution:	
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component side)	Parts on the parts face side seen from the parts face are indicated.

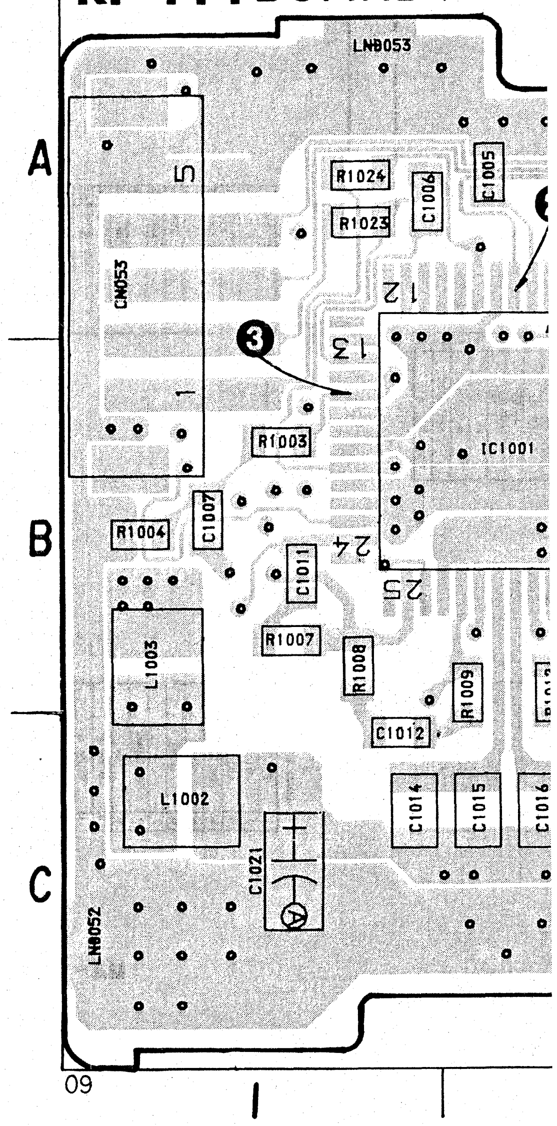
- **For schematic diagrams.**
- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minuts side of tantalum capacitor, because it is damaged by the heat.
- Chip resistor are 1/10W unless otherwise noted.
  kΩ : 1000Ω , MΩ : 1000kΩ .
- All capacitors are in μF unless otherwise noted. pF: μμF.
  50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ▭ : nonflammable resistor.
- ▭ : fusible resistor.
- □ : panel designation.
- △ : internal component.
- □ : adjustment for repeair.*
- —— : B+ Line.*
- - - - : B– Line.*
- ⇒ : IN/OUT direction of (+, –) B LINE.*
- Circled numbers refer to waveforms.*
- Voltages are dc between ground and measurement points.*
- Readings are taken with a color-bar signal input.*
- Readings are taken with a digital multimeter (DC10MΩ).*
- Voltage variations may be noted due to normal production tolerances.*

Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safty. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

*: indicated by the color red.

RP-144 (REC/PB HEAD AMPLIFIER) PRINTE

RP-144 BOARD (COMF



RP-144 BOARD

IC1001 B-2

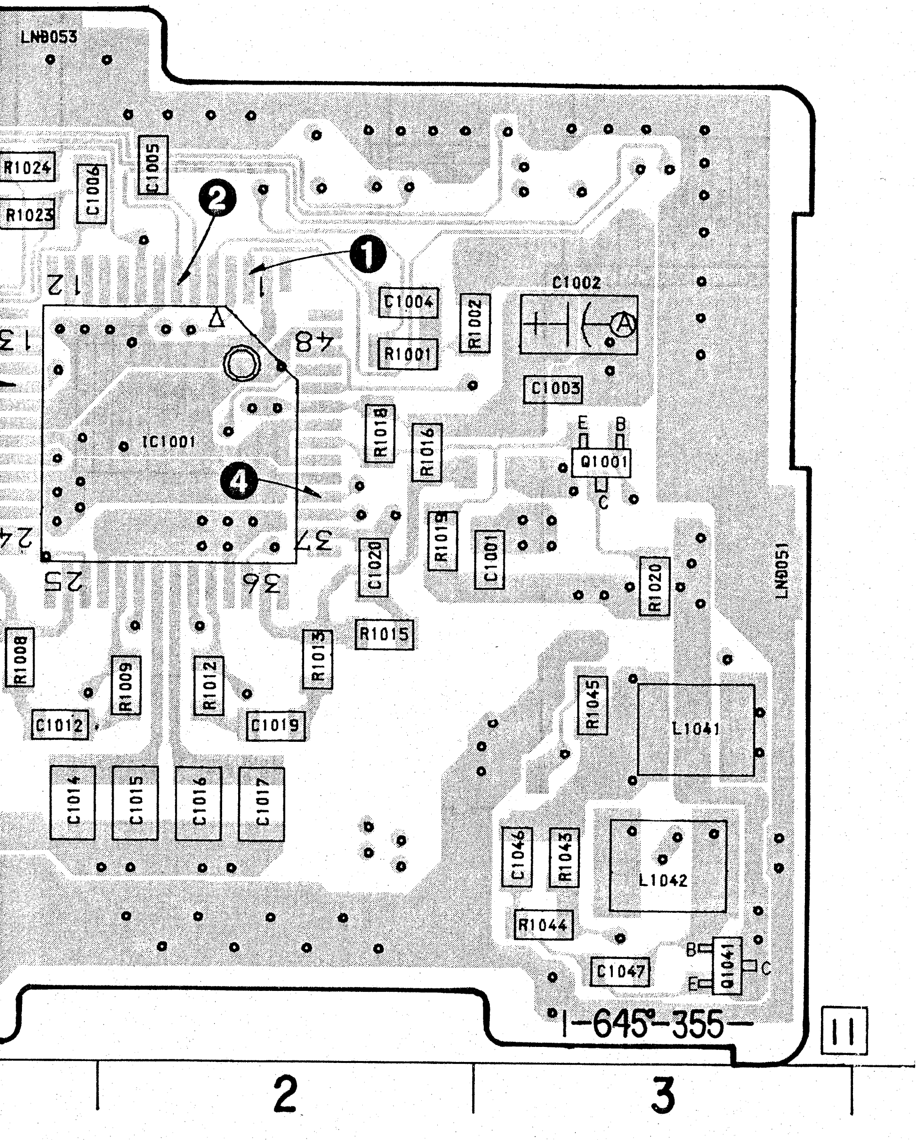
Q1001 B-3
Q1041 C-3
Q1042 C-4
Q1043 B-5

IC1001 8-752-033-38

Q1001 8-729-928-27
Q1041 8-729-928-19
Q1042 8-729-820-76
Q1043 8-729-928-19

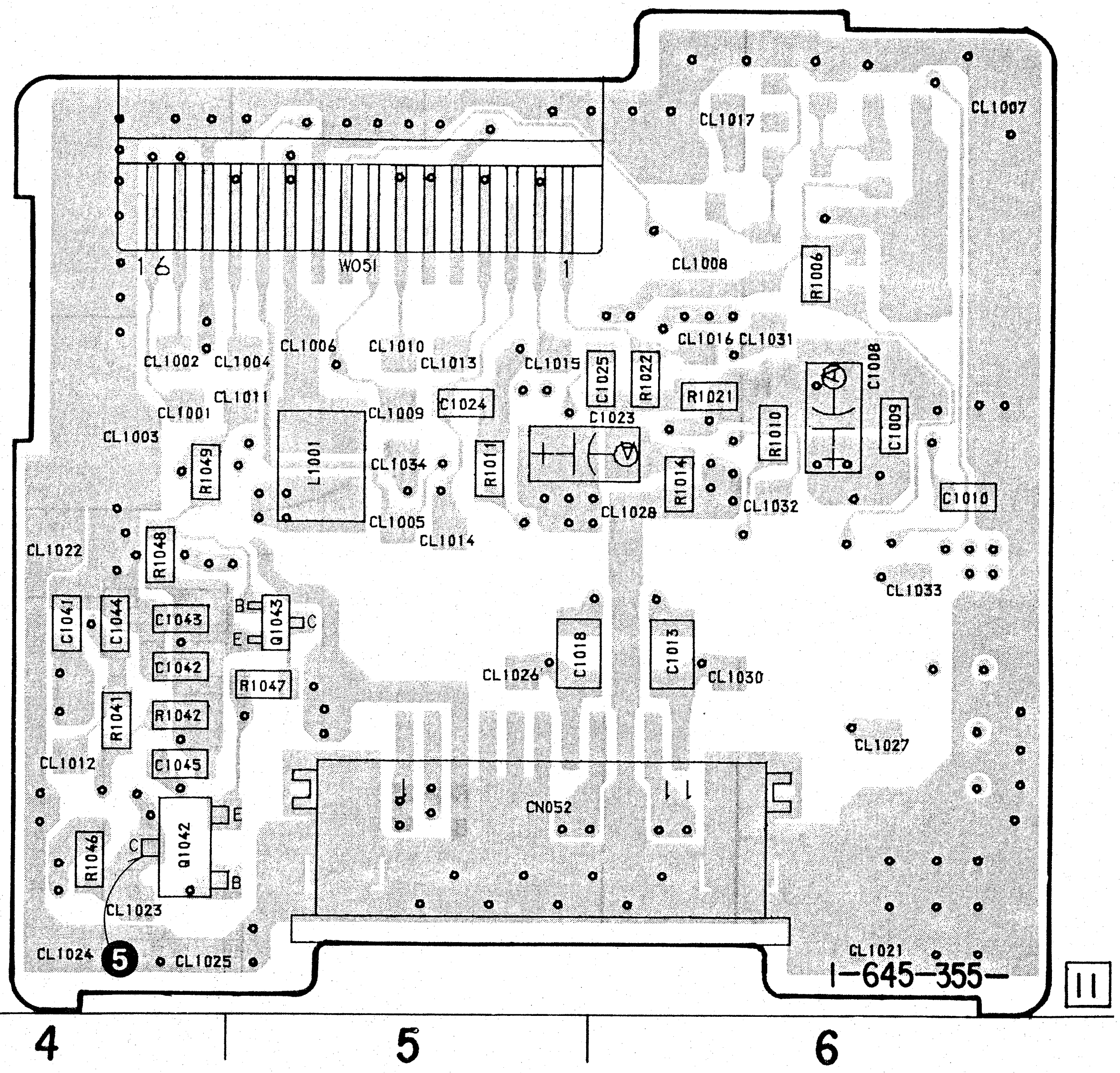
MPLIFIER) PRINTED WIRING BOARD

ARD (COMPONENT SIDE)



LN0053
R1024
R1023
C1006
C1005
2
1
12
13
C1004
R1001
R1002
C1002
C1003
48
IC1001
4
Q1001
E
B
C
R1018
R1016
R1019
C1001
R1020
LN0051
24
25
36
37
C1020
R1015
R1013
R1008
R1009
R1012
C1019
C1012
C1014
C1015
C1016
C1017
R1045
L1041
C1046
R1043
L1042
R1044
C1047
Q1041
1-645-355-
11
2
3

RP-144 BOARD (CONDUCTOR SIDE)



CL1017
CL1007
CL1008
W051
16
1
R1006
CL1016
CL1031
CL1002
CL1004
CL1006
CL1010
CL1013
CL1015
C1025
R1022
R1021
R1010
C1008
C1009
CL1011
CL1001
CL1003
C1024
CL1009
C1023
R1049
L1001
CL1034
R1011
R1014
CL1028
CL1032
C1010
CL1005
CL1014
CL1022
R1048
CL1033
C1041
C1044
C1043
Q1043
C1042
R1047
C1018
C1013
CL1026
CL1030
R1041
R1042
C1045
CL1012
CL1027
CN052
R1046
Q1042
CL1023
CL1024
5
CL1025
CL1021
1-645-355-
11
4
5
6

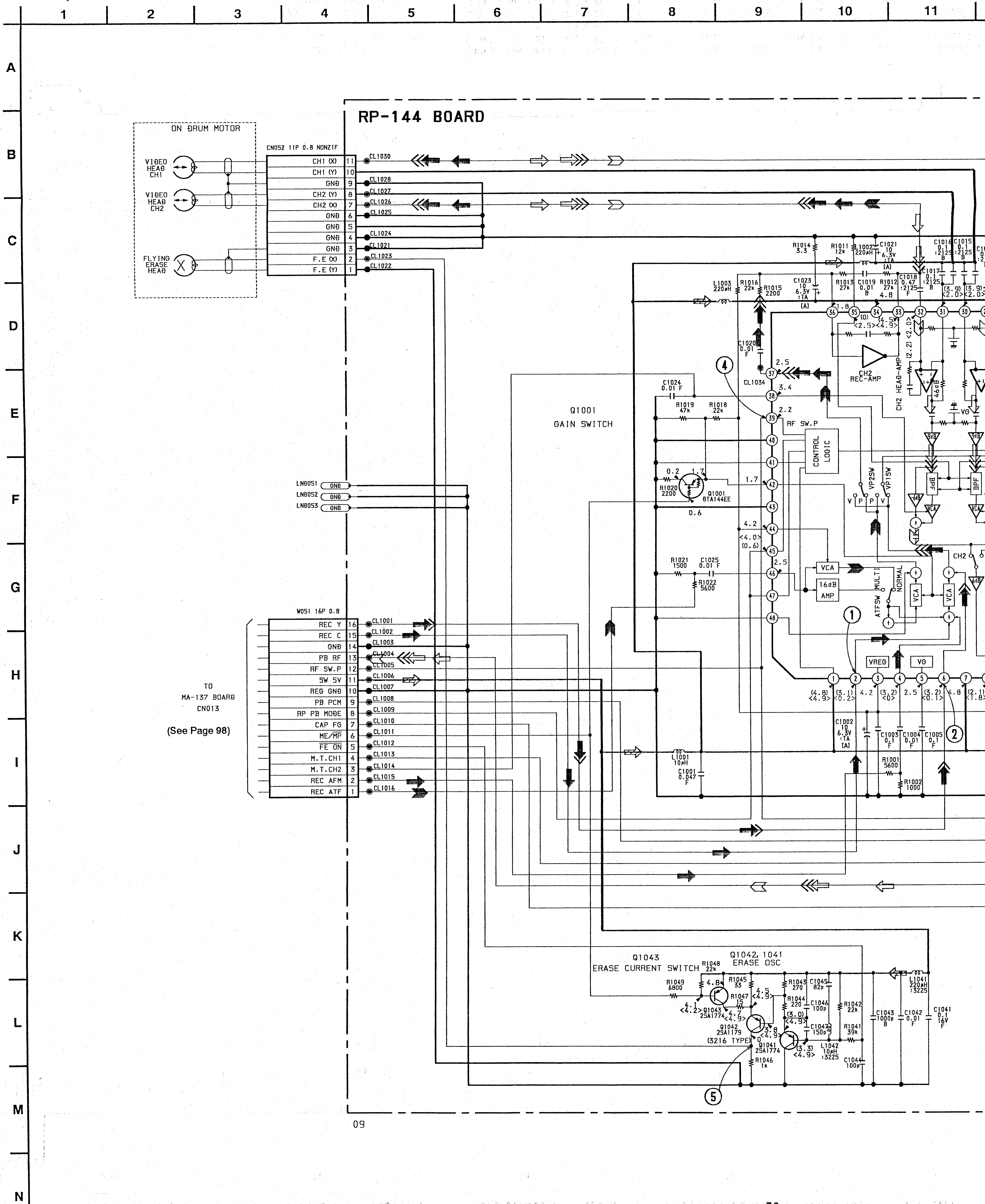
(IC)

IC1001	8-752-033-38	IC	CXA1202R

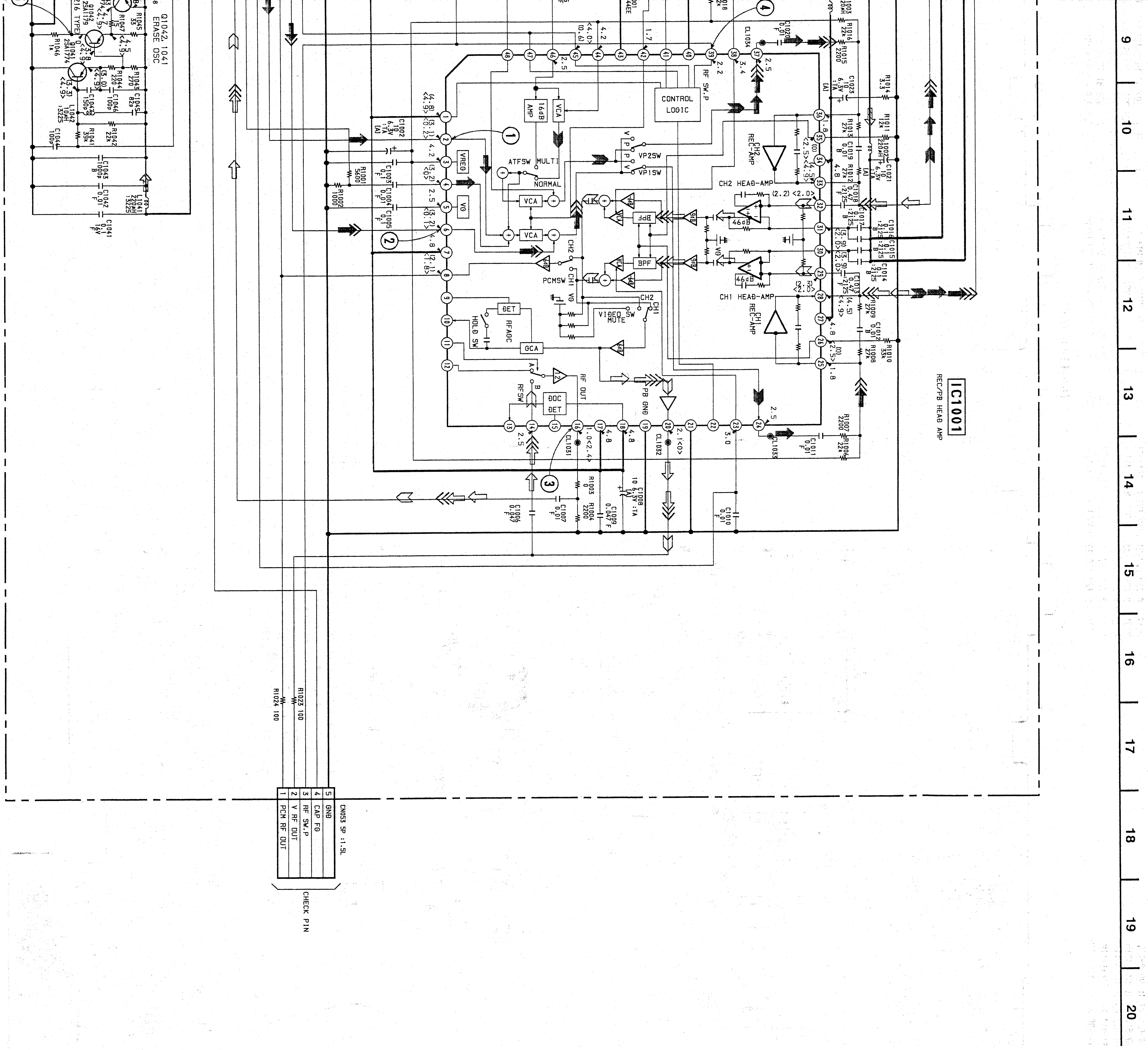
(TRANSISTOR)

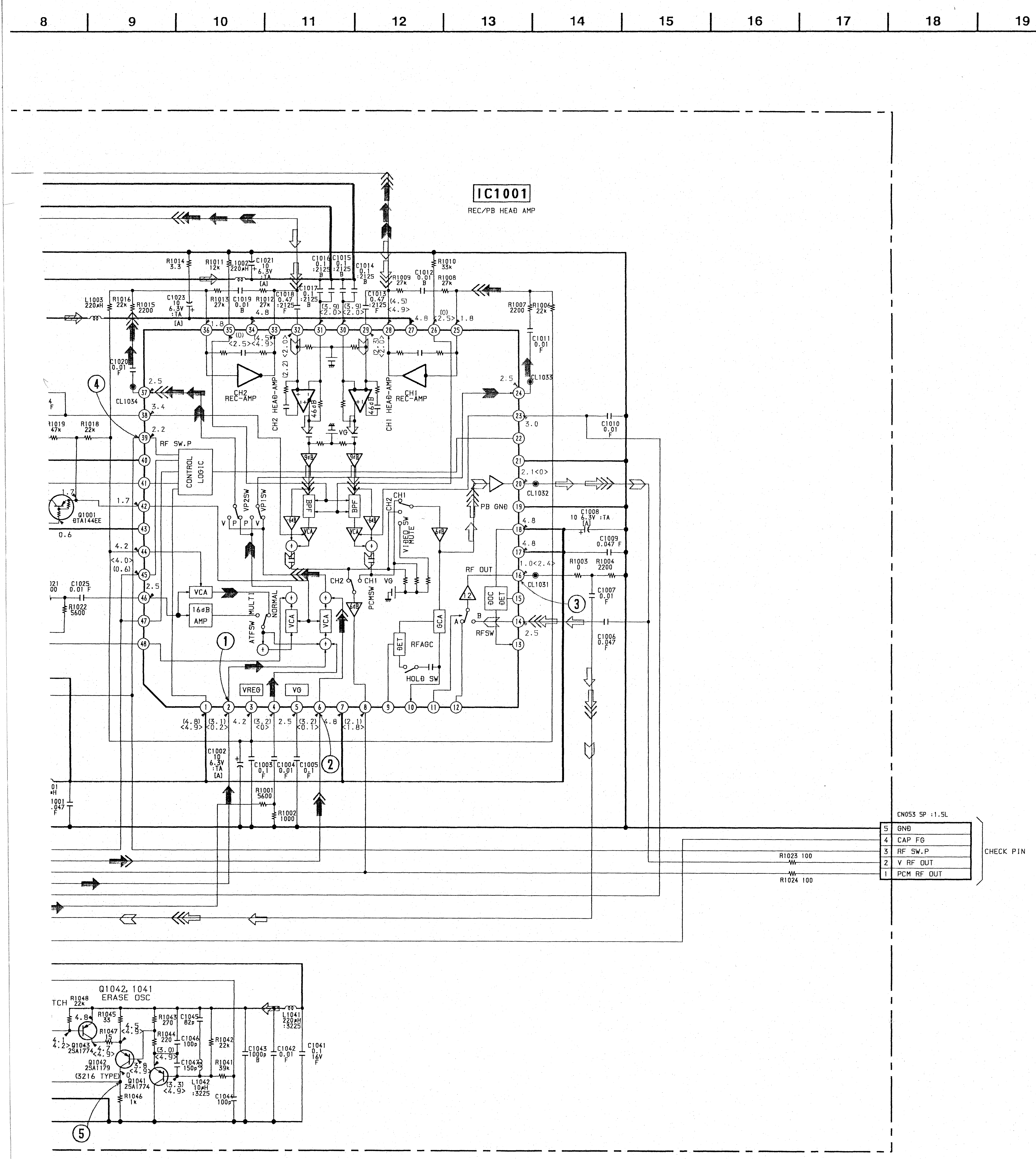
Q1001	8-729-928-27	TRANSISTOR	DTA144EE
Q1041	8-729-928-19	TRANSISTOR	2SA1774R
Q1042	8-729-820-76	TRANSISTOR	2SA1179-M5M6
Q1043	8-729-928-19	TRANSISTOR	2SA1774R

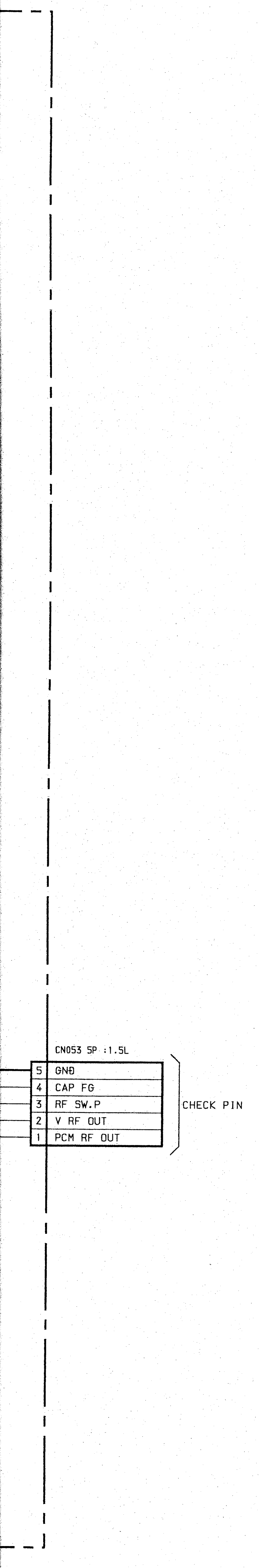
RP-144 (REC/PB HEAD AMPLIFIER) SCHEMATIC DIAGRAM



RP-144 BOARD
ON DRUM MOTOR
VIDEO HEAD CH1
VIDEO HEAD CH2
FLYING ERASE HEAD
CN052 11P 0.8 NONZIF
CH1 (X)
CH1 (Y)
GND
CH2 (Y)
CH2 (X)
F.E (X)
F.E (Y)
LN0051 GND
LN0052 GND
LN0053 GND
W051 16P 0.8
REC Y
REC C
GND
PB RF
RF SW.P
SW 5V
REG GND
PB PCM
RP PB MODE
CAP FG
ME/MP
FE ON
M.T.CH1
M.T.CH2
REC AFM
REC ATF
TO MA-137 BOARD CN013
(See Page 98)
Q1001 GAIN SWITCH
Q1001 BTA144EE
CONTROL LOGIC
RF SW.P
CH2 REC-AMP
CH2 HEAD-AMP
VP2SW
VP1SW
VCA
16dB AMP
ATFSW
MULTI
NORMAL
VREG
VG
BPF
46dB
Q1043 ERASE CURRENT SWITCH
Q1042, 1041 ERASE OSC
Q1043 2SA1774
Q1042 2SA1179 (3216 TYPE)
Q1041 2SA1774
①
②
④
⑤
09


IC1001
REC/PB HEAD AMP
Q1042, 1041
ERASE OSC
2SA1179
2SA1774
216 TYPE
R1045 33
R1047
R1046 1k
R1044 220
R1043 270
C1045 82p
C1046 100p
C1047 150p
L1042 104H
R1041 39k
R1042 22k
C1044 100p
C1043 100p
C1042 0.01 F
L1041 220μH :5225
C1041 16V
CONTROL LOGIC
16dB AMP
VCA
VREG
VG
ATFSW
MULTI
NORMAL
VP2SW
VP1SW
CH2 HEAD-AMP
CH1 HEAD-AMP
CH2 REC-AMP
CH1 REC-AMP
46dB
BPF
PCMSW
CH2
CH1
VIDEO SW
MUTE
DET
RFAGC
HOLD SW
GCA
DOC DET
RFSW
RF OUT
PB GND
RF SW.P
R1001 5600
R1002 1000
C1002 10 6.3V :TA
C1003 0.01 F
C1004 0.01 F
C1005 0.01 F
C1006 0.047 F
C1007 0.01 F
R1003 0
R1004 2200
C1008 10 6.3V :TA
C1009 0.047 F
C1010 0.01 F
C1011 0.01 F
R1006 22k
R1007 2200
R1008 27k
R1009 27k
R1010 33k
C1012 0.01 B
C1013 0.47 :125
R1011 12k
R1012 27k
R1013 27k
R1014 3.3
R1015 2200
R1016 22k
C1019 0.01 B
C1018 0.47 :125
C1017 0.47 :125
C1020 0.01 F
C1021 10 6.3V :TA
C1023 6.3V :TA
C1014 0.1 :125 B
C1015 0.1 :125 B
C1016 0.1 :125 B
L1002 220μH
CL1031
CL1032
CL1033
CL1034
①
②
③
④
R1023 100
R1024 100
CN053 5P :1.5L
1 PCM RF OUT
2 V RF OUT
3 RF SW.P
4 CAP FG
5 GND
CHECK PIN
9
10
11
12
13
14
15
16
17
18
19
20


IC1001
REC/PB HEAD AMP
CONTROL LOGIC
RF SW.P
CH2 REC-AMP
CH1 REC-AMP
CH2 HEAD-AMP
CH1 HEAD-AMP
VP2SW
VP1SW
VCA
16dB AMP
ATFSW
MULTI
NORMAL
BPF
PCMSW
VIDEO SW MUTE
RF OUT
PB GND
DOC DET
RFSW
GCA
DET
RFAGC
HOLD SW
VREG
VG
Q1001 DTA144EE
Q1042, 1041 ERASE OSC
Q1043 2SA1774
Q1042 2SA1179 (3216 TYPE)
Q1041 2SA1774
CN053 5P :1.5L
5 GND
4 CAP FG
3 RF SW.P
2 V RF OUT
1 PCM RF OUT
CHECK PIN
R1023 100
R1024 100
8
9
10
11
12
13
14
15
16
17
18
19


CN053 5P :1.5L
5 GND
4 CAP FG
3 RF SW.P
2 V RF OUT
1 PCM RF OUT
CHECK PIN

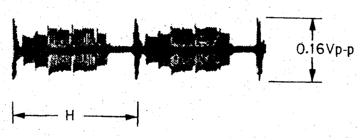
- **SIGNAL PATH**

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	➡》	➡》》	➡
PB			⇨》》	⇨

	REC	REC/PB	PB
Drum speed servo			
Drum phase servo			
Drum servo (speed and phase)			
Capstan speed servo			
Capstan phase servo			
Capstan servo (speed and phase)			
Ref. signal	➤		▷

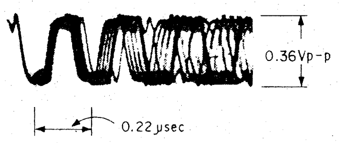
RP-144 BOARD

❶



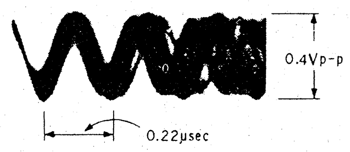
IC1001 ② REC

❷



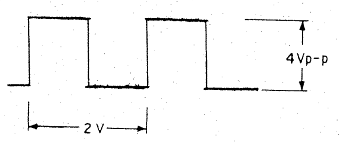
IC1001 ⑥ REC

❸



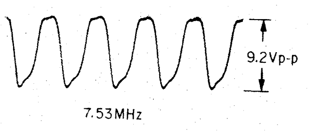
IC1001 ⑯ PB

❹



IC1001 (39) REC/PB

❺



Q1042 Ⓒ REC

MA-137 (VIDEO, SERVO/SYSTEM CONTROL, RELAY/POWER) PRINTED WIRING BOARD

MA-137 BOARD

D001	B-22
D002	B-22
D004	H-19
D101	H-3
D199	I-15
D301	E-1
D310	H-22
D601	I-15
D602	H-8
D603	G-7
D701	D-16
D1000	H-1
D1001	G-18
D1002	C-6
IC001	C-21
IC091	[illegible]-1
IC101	F-21
IC102	I-4
IC103	I-21
IC201	C-19
IC202	C-6
IC203	C-5
IC204	B-6
IC205	D-6
IC206	B-5
IC301	F-2
IC601	H-15
IC602	I-16
IC603	I-17
IC701	F-10
IC702	F-13
IC703	F-15
IC704	C-8
IC705	E-16
IC707	F-15
IC801	C-14
Q001	B-21
Q002	D-22
Q003	D-21
Q004	C-23
Q005	C-3
Q006	I-6
Q007	H-7
Q008	I-7
Q009	H-6
Q010	I-18
Q012	H-19
Q091	I-23
Q092	I-23
Q093	F-1
Q101	G-2
Q103	I-5
Q202	B-20
Q203	E-5
Q310	I-23
Q311	I-22
Q312	J-21
Q313	H-3
Q609	H-13
Q611	H-13
Q619	H-10
Q621	H-15
Q622	H-14
Q623	H-15
Q625	H-14
Q626	I-10
Q627	I-8
Q628	I-8
Q629	H-9
Q630	I-10
Q631	H-9
Q632	H-10
Q633	H-8
Q634	H-10
Q701	G-13
Q702	G-14
Q703	F-14
Q705	F-8
Q706	G-14
Q707	G-13
Q708	F-8
Q712	B-8
Q713	B-8
Q714	B-8
Q717	G-11
Q719	E-14
Q720	F-14
Q721	E-15
Q722	E-9
Q723	D-16
Q724	E-8
Q730	G-15
Q732	E-15
Q755	G-15
Q760	F-8
Q761	F-16
Q765	G-16
Q766	G-16
Q768	G-16
Q801	C-15
Q803	C-13
Q804	C-13
Q805	E-11
Q806	D-14
Q807	C-10
Q1601	G-8
Q1602	H-8
Q1603	G-8
Q1604	F-7
Q1605	H-14
Q1606	H-9
Q1801	G-17
Q1802	G-17
Q1803	G-17

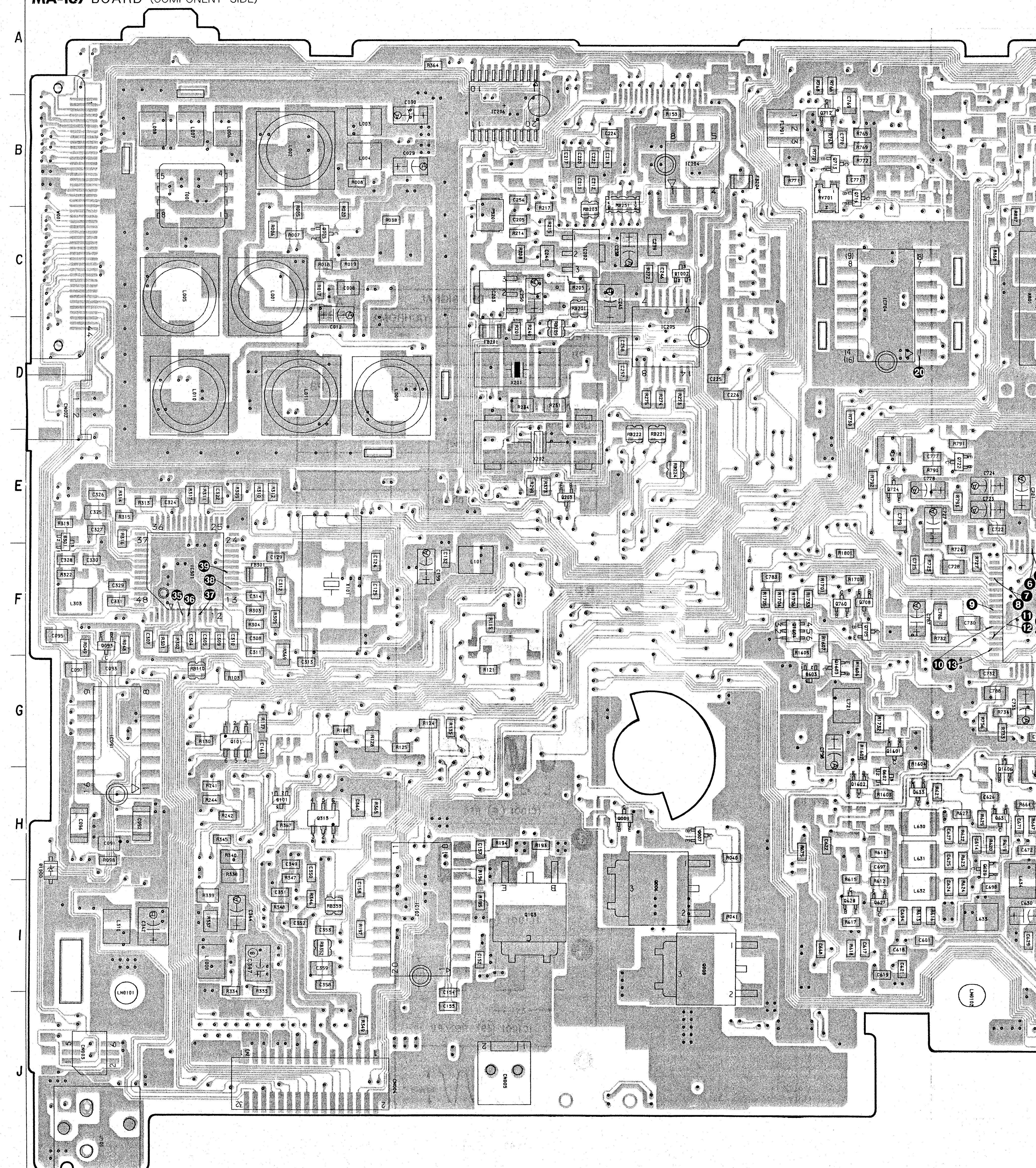
〈 DIODE 〉

D001	8-719-989-33	DIODE FC806
D002	8-719-989-03	DIODE DAN222
D004	8-719-991-00	DIODE DAP222
D101	8-719-989-03	DIODE DAN222
D199	8-719-422-91	DIODE MA8091
D301	8-719-989-00	DIODE DA221
D310	8-719-989-03	DIODE DAN222
D601	8-719-951-22	DIODE IMN10
D602	8-719-989-03	DIODE DAN222
D603	8-719-989-03	DIODE DAN222
D701	8-719-989-03	DIODE DAN222
D1000	8-719-422-91	DIODE MA8091
D1001	8-719-422-91	DIODE MA8091
D1002	8-719-989-03	DIODE DAN222

〈 IC 〉

IC001	8-759-060-94	IC MB3785APFV-G-BND-ER
IC091	8-759-509-13	IC XRU4052BF
IC101	8-752-836-15	IC CXP80624A-010R
IC102	8-759-039-01	IC MPC1720M
IC103	8-759-990-55	IC CXA8006M
IC201	8-759-099-93	IC MB89092-109
IC202	8-759-512-69	IC S-81350HG-KD
IC203	8-759-946-03	IC S-8054ALR-LN-S
IC204	8-759-044-78	IC AK6420F
IC205	8-759-999-02	IC TL1596CDB
IC206	8-759-635-27	IC M62352GP
IC301	8-759-512-42	IC CXA1481R
IC601	8-759-012-00	IC MC10H116M
IC602	8-752-053-21	IC CXA1211M
IC603	8-759-998-32	IC CXD-2107M
IC701	8-752-065-54	IC CXA1207AR
IC702	8-752-053-21	IC CXA1211M
IC703	8-759-636-33	IC CXA1452
IC704	8-752-332-68	IC CXL5502M
IC705	8-759-635-27	IC M62352GP
IC707	8-759-710-86	IC NJM2233BM
IC801	8-752-065-56	IC CXA1208R

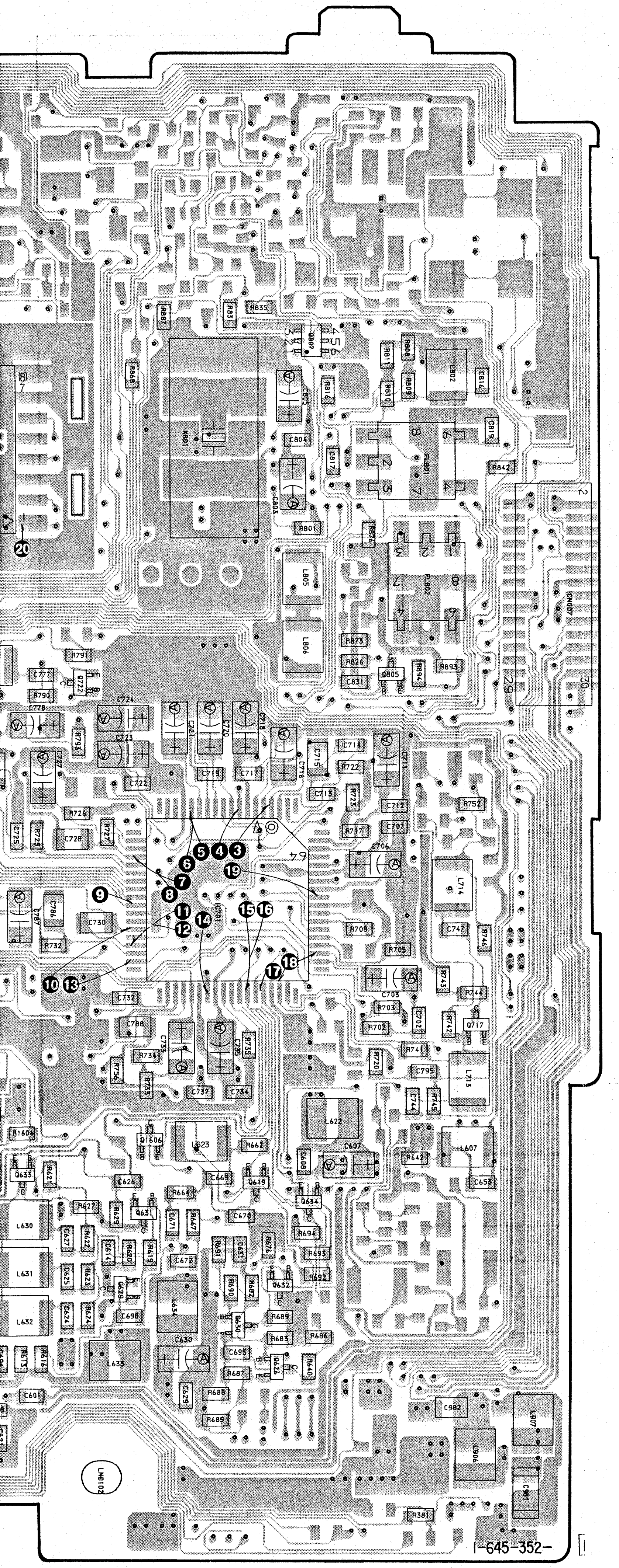
MA-137 BOARD (COMPONENT SIDE)



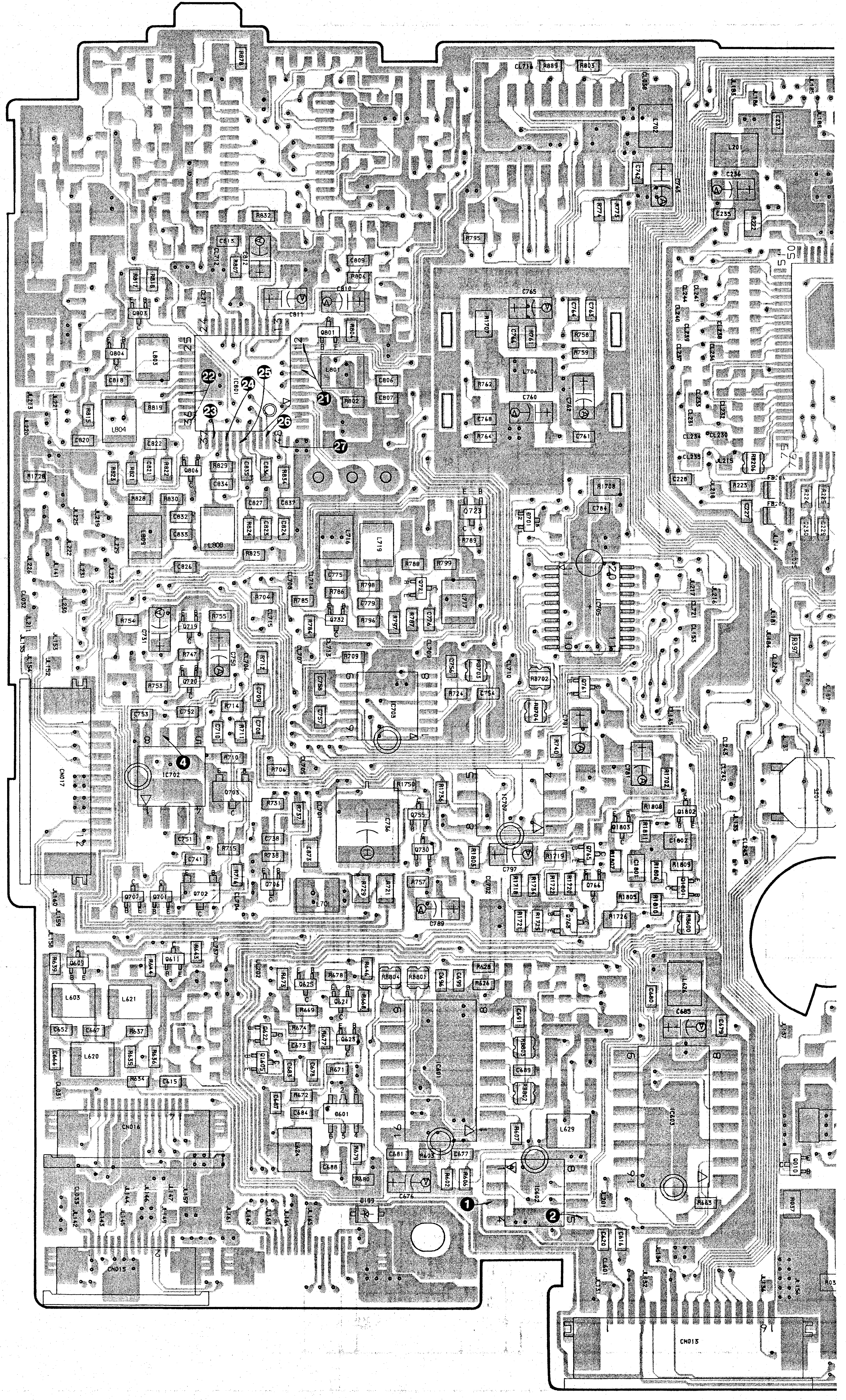
	-752-065-54	IC CXA1207AR
	-752-053-21	IC CXA1211M
	-759-636-33	IC CXA1452
	-752-332-68	IC CXL5502M
	-759-635-27	IC M62352GP
	-759-710-86	IC NJM2233BM
	-752-065-56	IC CXA1208R

(TRANSISTOR)

⚠Q001	8-729-823-84	TRANSISTOR FP102
⚠Q002	8-729-823-84	TRANSISTOR FP102
⚠Q003	8-729-823-84	TRANSISTOR FP102
⚠Q004	8-729-805-25	TRANSISTOR 2SB1121-S
Q005	8-729-927-XX	TRANSISTOR 2SC4617R
⚠Q006	8-752-822-52	TRANSISTOR 2SK1469
Q007	8-729-928-81	TRANSISTOR DTC144EE
⚠Q008	8-752-822-52	TRANSISTOR 2SK1469
Q009	8-729-928-81	TRANSISTOR DTC144EE
Q010	8-729-928-27	TRANSISTOR DTA144EE
Q012	8-729-928-81	TRANSISTOR DTC144EE
Q091	8-729-927-XX	TRANSISTOR 2SC4617R
Q092	8-729-927-XX	TRANSISTOR 2SC4617R
Q093	8-729-927-XX	TRANSISTOR 2SC4617R
Q101	8-729-420-12	TRANSISTOR XN4213
Q103	8-729-820-46	TRANSISTOR 2SB1202FAS
Q202	8-729-927-XX	TRANSISTOR 2SC4617R
Q203	8-729-928-81	TRANSISTOR DTC144EE
Q310	8-729-927-XX	TRANSISTOR 2SC4617R
Q311	8-729-927-65	TRANSISTOR UMT1
Q312	8-729-928-90	TRANSISTOR DTC114EE
Q313	8-729-823-95	TRANSISTOR FC149
Q609	8-729-927-XX	TRANSISTOR 2SC4617R
Q611	8-729-927-XX	TRANSISTOR 2SC4617R
Q619	8-729-928-72	TRANSISTOR DTA114TE
Q621	8-729-928-72	TRANSISTOR DTA114TE
Q622	8-729-927-XX	TRANSISTOR 2SC4617R
Q623	8-729-927-XX	TRANSISTOR 2SC4617R
Q625	8-729-928-72	TRANSISTOR DTA114TE
Q626	8-729-927-XX	TRANSISTOR 2SC4617R
Q627	8-729-927-XX	TRANSISTOR 2SC4617R
Q628	8-729-928-19	TRANSISTOR 2SA1774R
Q629	8-729-928-19	TRANSISTOR 2SA1774R
Q630	8-729-927-XX	TRANSISTOR 2SC4617R
Q631	8-729-927-XX	TRANSISTOR 2SC4617R
Q632	8-729-927-XX	TRANSISTOR 2SC4617R
Q633	8-729-927-XX	TRANSISTOR 2SC4617R
Q634	8-729-928-81	TRANSISTOR DTC144EE
Q701	8-729-928-81	TRANSISTOR DTC144EE
Q702	8-729-202-38	TRANSISTOR 2SC3326N-A
Q703	8-729-202-38	TRANSISTOR 2SC3326N-A
Q705	8-729-928-81	TRANSISTOR DTC144EE
Q706	8-729-928-27	TRANSISTOR DTA144EE
Q707	8-729-928-81	TRANSISTOR DTC144EE
Q708	8-729-928-81	TRANSISTOR DTC144EE
Q712	8-729-928-19	TRANSISTOR
Q713	8-729-927-XX	TRANSISTOR
Q714	8-729-927-XX	TRANSISTOR
Q717	8-729-927-XX	TRANSISTOR
Q719	8-729-927-XX	TRANSISTOR
Q720	8-729-927-XX	TRANSISTOR
Q721	8-729-927-XX	TRANSISTOR
Q722	8-729-927-XX	TRANSISTOR
Q723	8-729-928-27	TRANSISTOR
Q724	8-729-928-19	TRANSISTOR
Q730	8-729-928-81	TRANSISTOR
Q732	8-729-927-XX	TRANSISTOR
Q755	8-729-928-90	TRANSISTOR
Q760	8-729-927-XX	TRANSISTOR
Q761	8-729-927-XX	TRANSISTOR



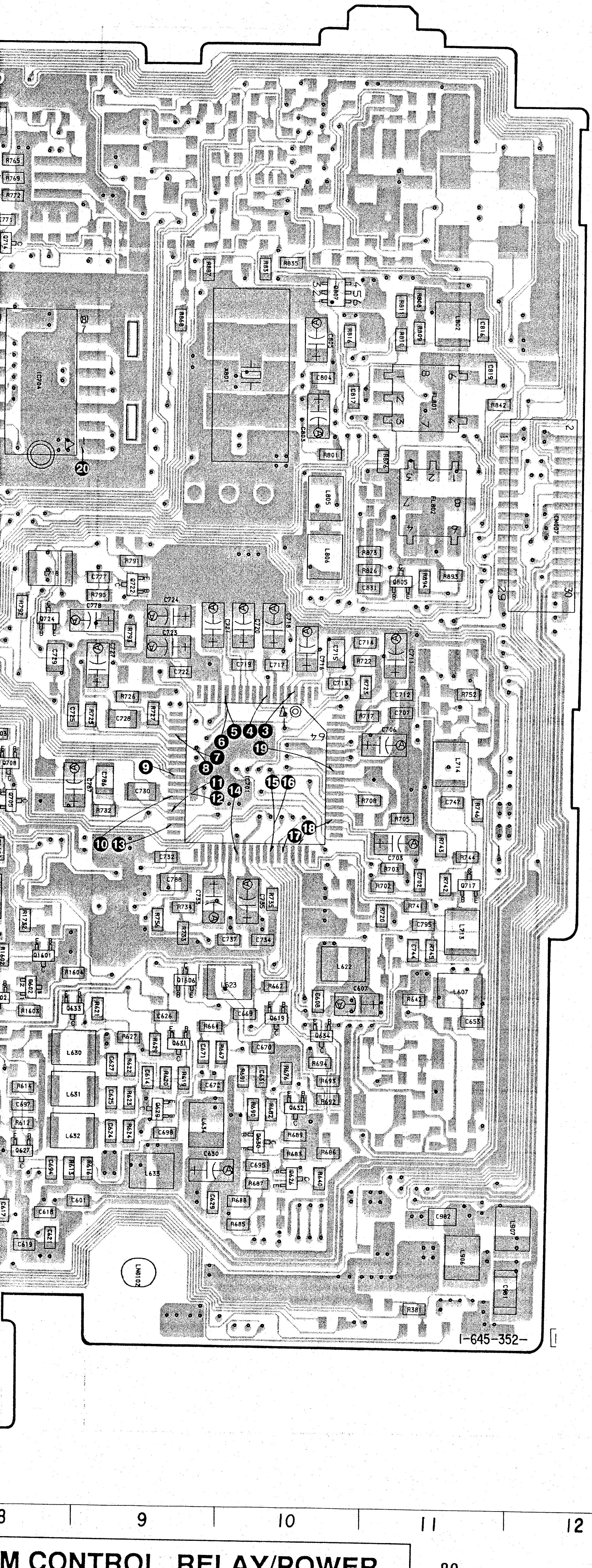
MA-137 BOARD (CONDUCTOR SIDE)



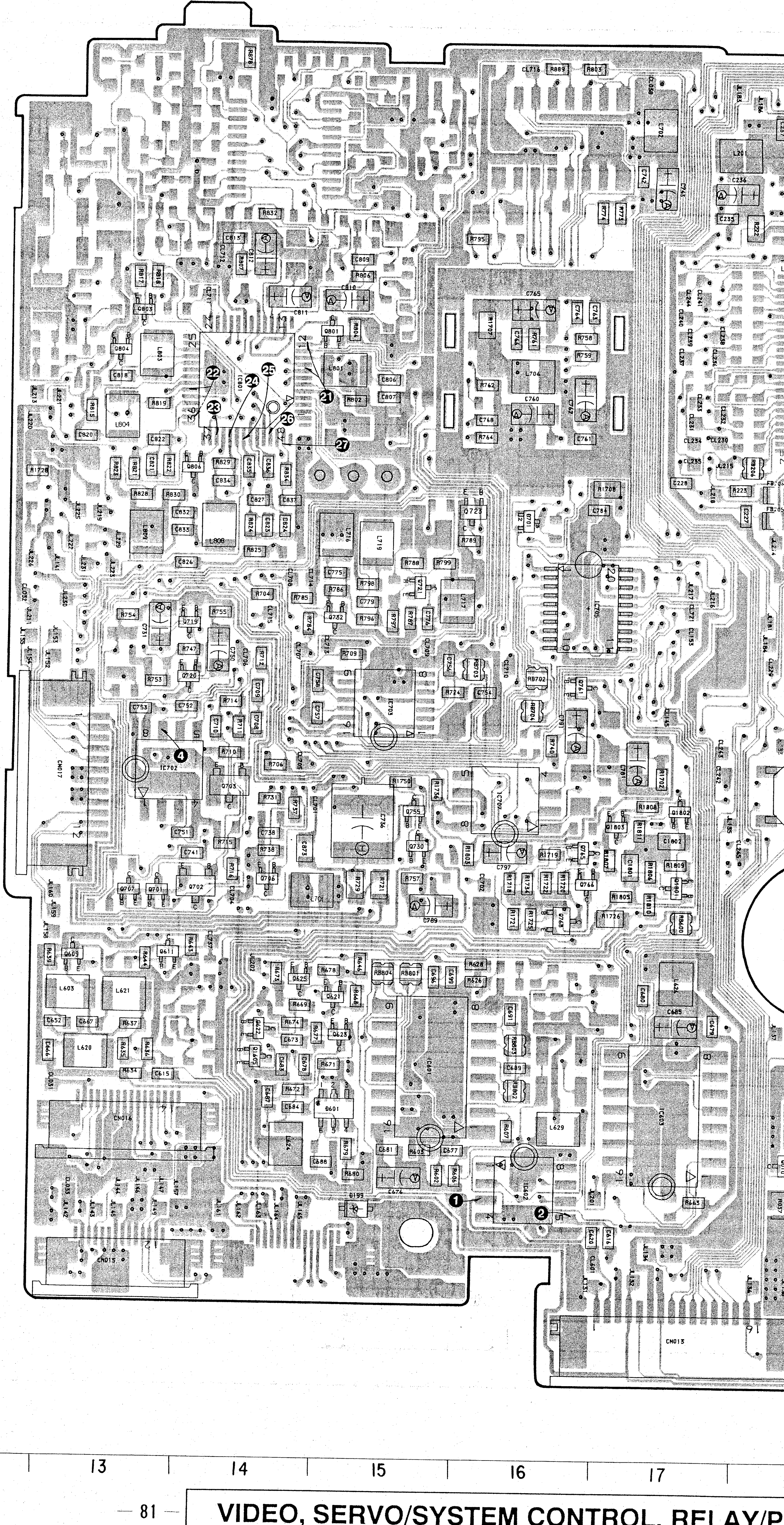
IC701	8-752-065-54	IC CXA1207AR
IC702	8-752-053-21	IC CXA1211M
IC703	8-759-636-33	IC CXA1452
IC704	8-752-332-68	IC CXL5502M
IC705	8-759-635-27	IC M62352GP
IC707	8-759-710-86	IC NJM2233BM
IC801	8-752-065-56	IC CXA1208R

〈 TRANSISTOR 〉

⚠Q001	8-729-823-84	TRANSISTOR FP102
⚠Q002	8-729-823-84	TRANSISTOR FP102
⚠Q003	8-729-823-84	TRANSISTOR FP102
⚠Q004	8-729-805-25	TRANSISTOR 2SB1121-S
Q005	8-729-927-XX	TRANSISTOR 2SC4617R
⚠Q006	8-752-822-52	TRANSISTOR 2SK1469
Q007	8-729-928-81	TRANSISTOR DTC144EE
⚠Q008	8-752-822-52	TRANSISTOR 2SK1469
Q009	8-729-928-81	TRANSISTOR DTC144EE
Q010	8-729-928-27	TRANSISTOR DTA144EE
Q012	8-729-928-81	TRANSISTOR DTC144EE
Q091	8-729-927-XX	TRANSISTOR 2SC4617R
Q092	8-729-927-XX	TRANSISTOR 2SC4617R
Q093	8-729-927-XX	TRANSISTOR 2SC4617R
Q101	8-729-420-12	TRANSISTOR XN4213
Q103	8-729-820-46	TRANSISTOR 2SB1202FAS
Q202	8-729-927-XX	TRANSISTOR 2SC4617R
Q203	8-729-928-81	TRANSISTOR DTC144EE
Q310	8-729-927-XX	TRANSISTOR 2SC4617R
Q311	8-729-927-65	TRANSISTOR UMT1
Q312	8-729-928-90	TRANSISTOR DTC114EE
Q313	8-729-823-95	TRANSISTOR FC149
Q609	8-729-927-XX	TRANSISTOR 2SC4617R
Q611	8-729-927-XX	TRANSISTOR 2SC4617R
Q619	8-729-928-72	TRANSISTOR DTA114TE
Q621	8-729-928-72	TRANSISTOR DTA114TE
Q622	8-729-927-XX	TRANSISTOR 2SC4617R
Q623	8-729-927-XX	TRANSISTOR 2SC4617R
Q625	8-729-928-72	TRANSISTOR DTA114TE
Q626	8-729-927-XX	TRANSISTOR 2SC4617R
Q627	8-729-927-XX	TRANSISTOR 2SC4617R
Q628	8-729-928-19	TRANSISTOR 2SA1774R
Q629	8-729-928-19	TRANSISTOR 2SA1774R
Q630	8-729-927-XX	TRANSISTOR 2SC4617R
Q631	8-729-927-XX	TRANSISTOR 2SC4617R
Q632	8-729-927-XX	TRANSISTOR 2SC4617R
Q633	8-729-927-XX	TRANSISTOR 2SC4617R
Q634	8-729-928-81	TRANSISTOR DTC144EE
Q701	8-729-928-81	TRANSISTOR DTC144EE
Q702	8-729-202-38	TRANSISTOR 2SC3326N-A
Q703	8-729-202-38	TRANSISTOR 2SC3326N-A
Q705	8-729-928-81	TRANSISTOR DTC144EE
Q706	8-729-928-27	TRANSISTOR DTA144EE
Q707	8-729-928-81	TRANSISTOR DTC144EE
Q708	8-729-928-81	TRANSISTOR DTC144EE
Q712	8-729-928-19	TR
Q713	8-729-927-XX	TR
Q714	8-729-927-XX	TR
Q717	8-729-927-XX	TR
Q719	8-729-927-XX	TR
Q720	8-729-927-XX	TR
Q721	8-729-927-XX	TR
Q722	8-729-927-XX	TR
Q723	8-729-928-27	TR
Q724	8-729-928-19	TR
Q730	8-729-928-81	TR
Q732	8-729-927-XX	TR
Q755	8-729-928-90	TR
Q760	8-729-927-XX	TR
Q761	8-729-927-XX	TR

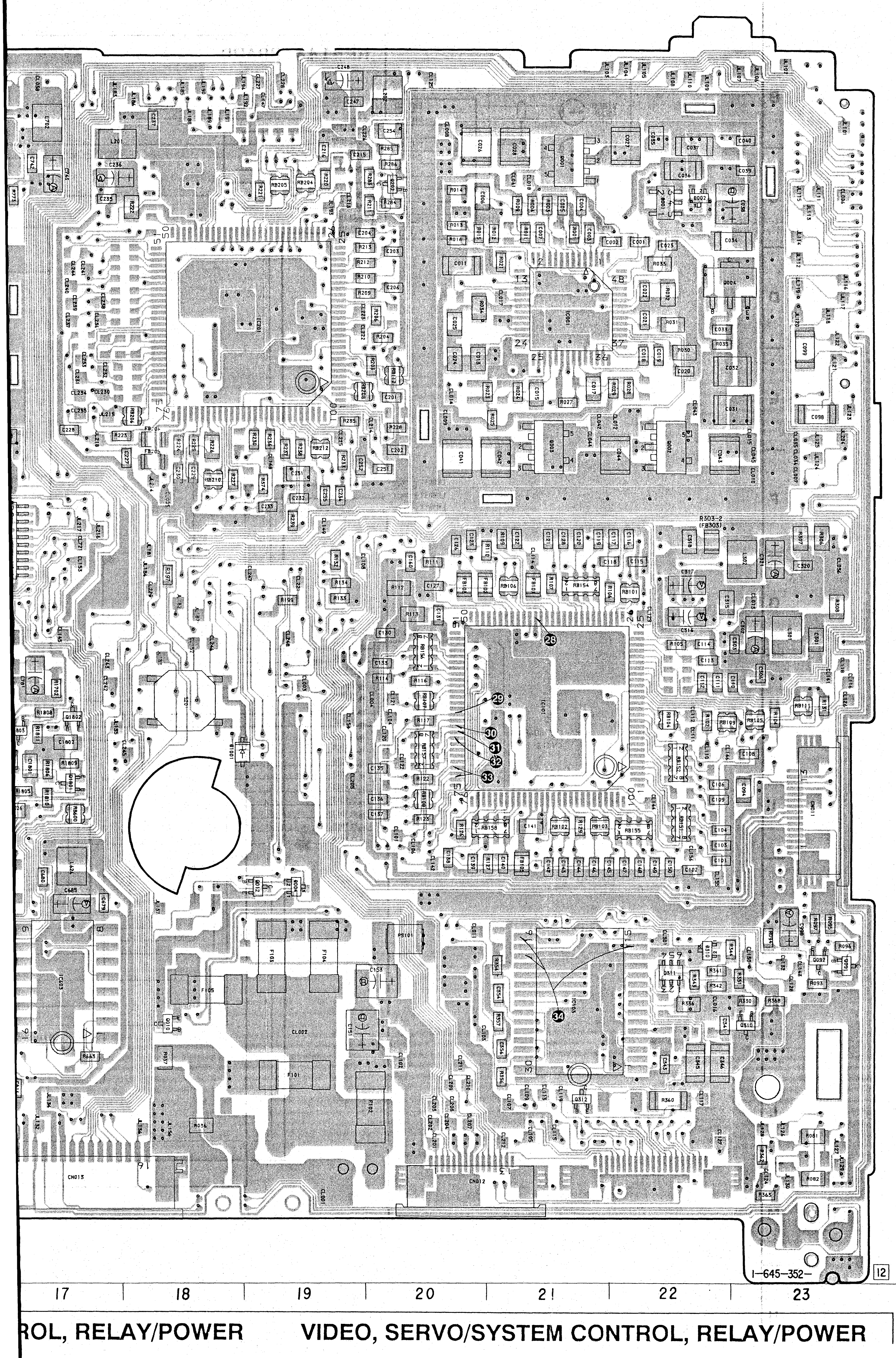


MA-137 BOARD (CONDUCTOR SIDE)



8 9 10 11 12 13 14 15 16 17

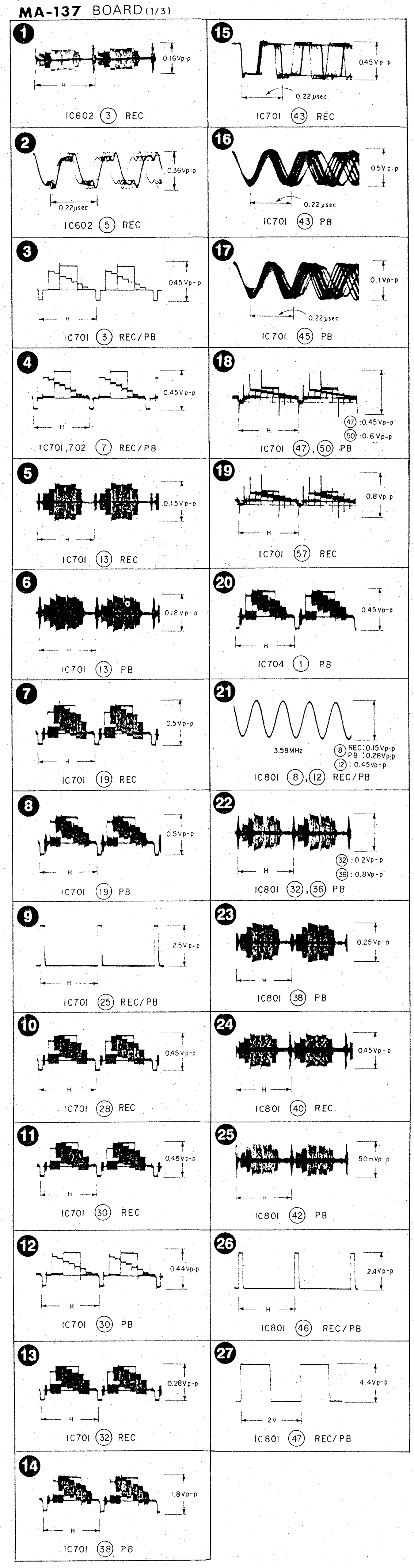
Q712	8-729-928-19	TRANSISTOR 2SA1774R
Q713	8-729-927-XX	TRANSISTOR 2SC4617R
Q714	8-729-927-XX	TRANSISTOR 2SC4617R
Q717	8-729-927-XX	TRANSISTOR 2SC4617R
Q719	8-729-927-XX	TRANSISTOR 2SC4617R
Q720	8-729-927-XX	TRANSISTOR 2SC4617R
Q721	8-729-927-XX	TRANSISTOR 2SC4617R
Q722	8-729-927-XX	TRANSISTOR 2SC4617R
Q723	8-729-928-27	TRANSISTOR DTA144EE
Q724	8-729-928-19	TRANSISTOR 2SA1774R
Q730	8-729-928-81	TRANSISTOR DTC144EE
Q732	8-729-927-XX	TRANSISTOR 2SC4617R
Q755	8-729-928-90	TRANSISTOR DTC114EE
Q760	8-729-927-XX	TRANSISTOR 2SC4617R
Q761	8-729-927-XX	TRANSISTOR 2SC4617R
Q765	8-729-927-XX	TRANSISTOR 2SC4617R
Q766	8-729-928-19	TRANSISTOR 2SA1774R
Q768	8-729-905-35	TRANSISTOR 2SC4081-R
Q801	8-729-927-XX	TRANSISTOR 2SC4617R
Q803	8-729-928-81	TRANSISTOR DTC144EE
Q804	8-729-927-XX	TRANSISTOR 2SC4617R
Q805	8-729-928-19	TRANSISTOR 2SA1774R
Q806	8-729-927-XX	TRANSISTOR 2SC4617R
Q807	8-729-930-13	TRANSISTOR UMH2
Q1601	8-729-928-19	TRANSISTOR 2SA1774R
Q1602	8-729-928-81	TRANSISTOR DTC144EE
Q1603	8-729-928-19	TRANSISTOR 2SA1774R
Q1604	8-729-930-13	TRANSISTOR UMH2
Q1605	8-729-928-81	TRANSISTOR DTC144EE
Q1606	8-729-928-72	TRANSISTOR DTA114TE
Q1801	8-729-927-XX	TRANSISTOR 2SC4617R
Q1802	8-729-927-XX	TRANSISTOR 2SC4617R
Q1803	8-729-928-27	TRANSISTOR DTA144EE



MA-137 (VIDEO) SCHEMATIC DIAGRAM

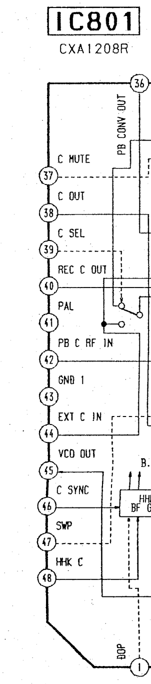
- Refer to page 79 for Printed Wiring Board. (MA-137 Board)

MA-137 BOARD (1/3)

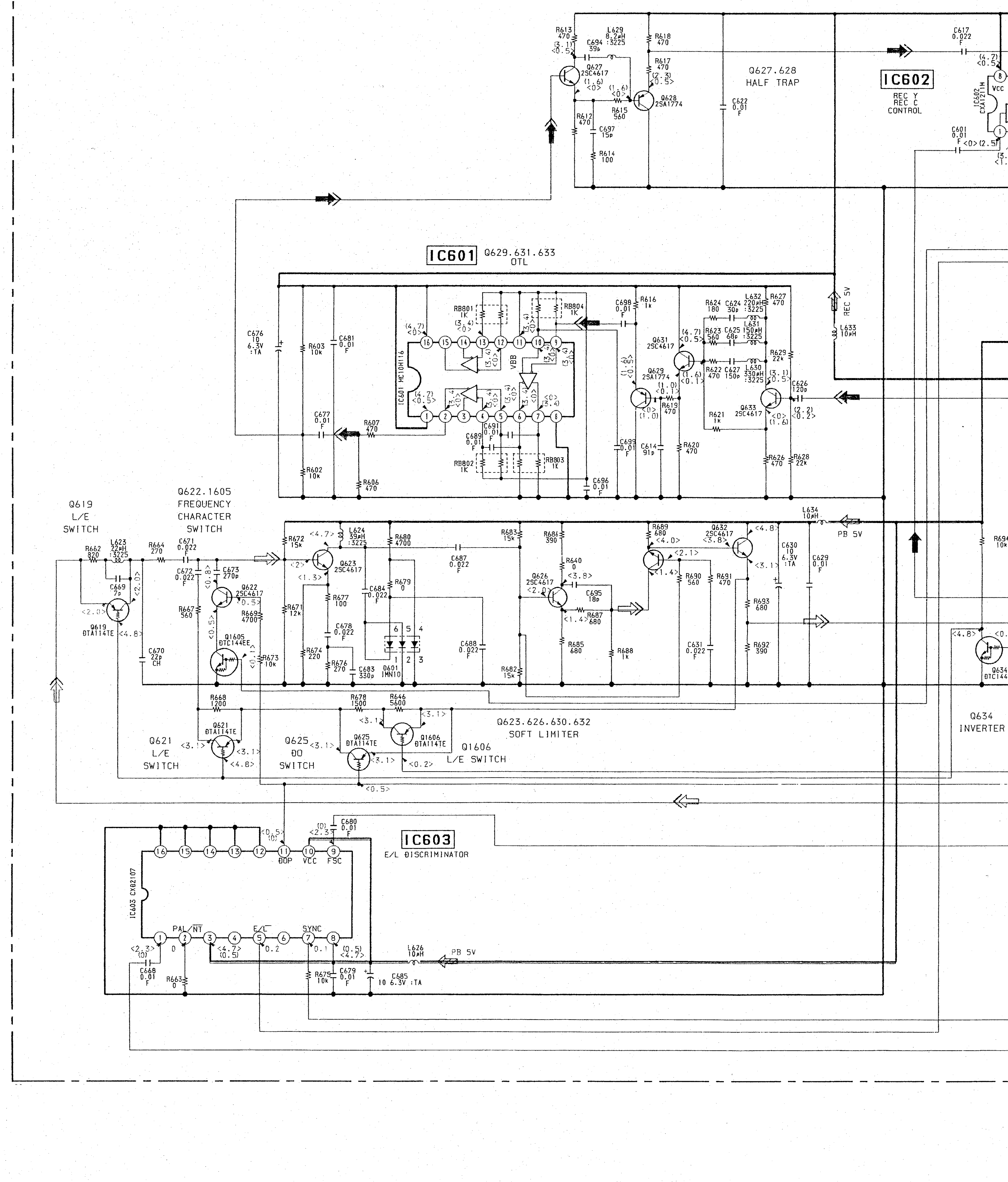


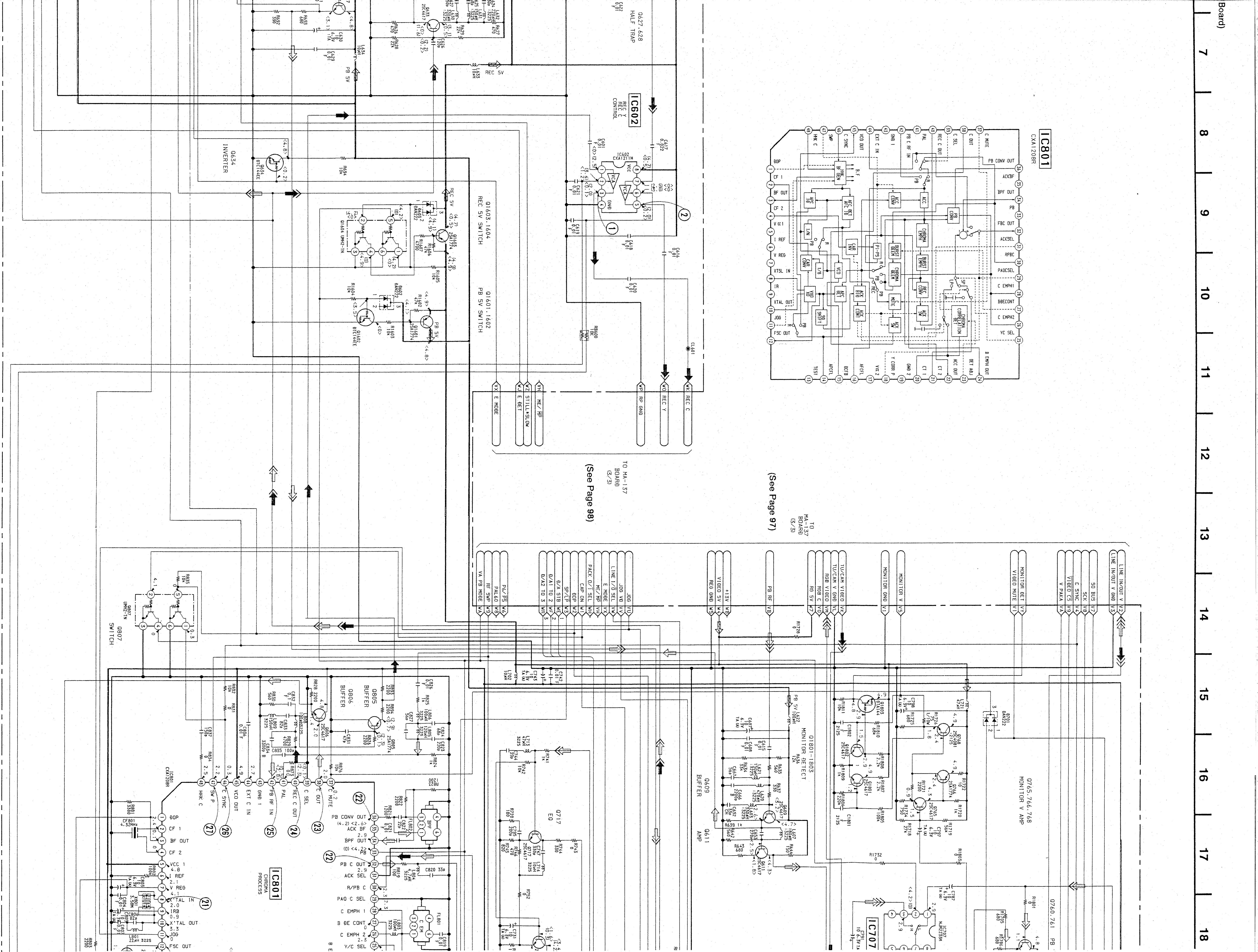
- **SIGNAL PATH**

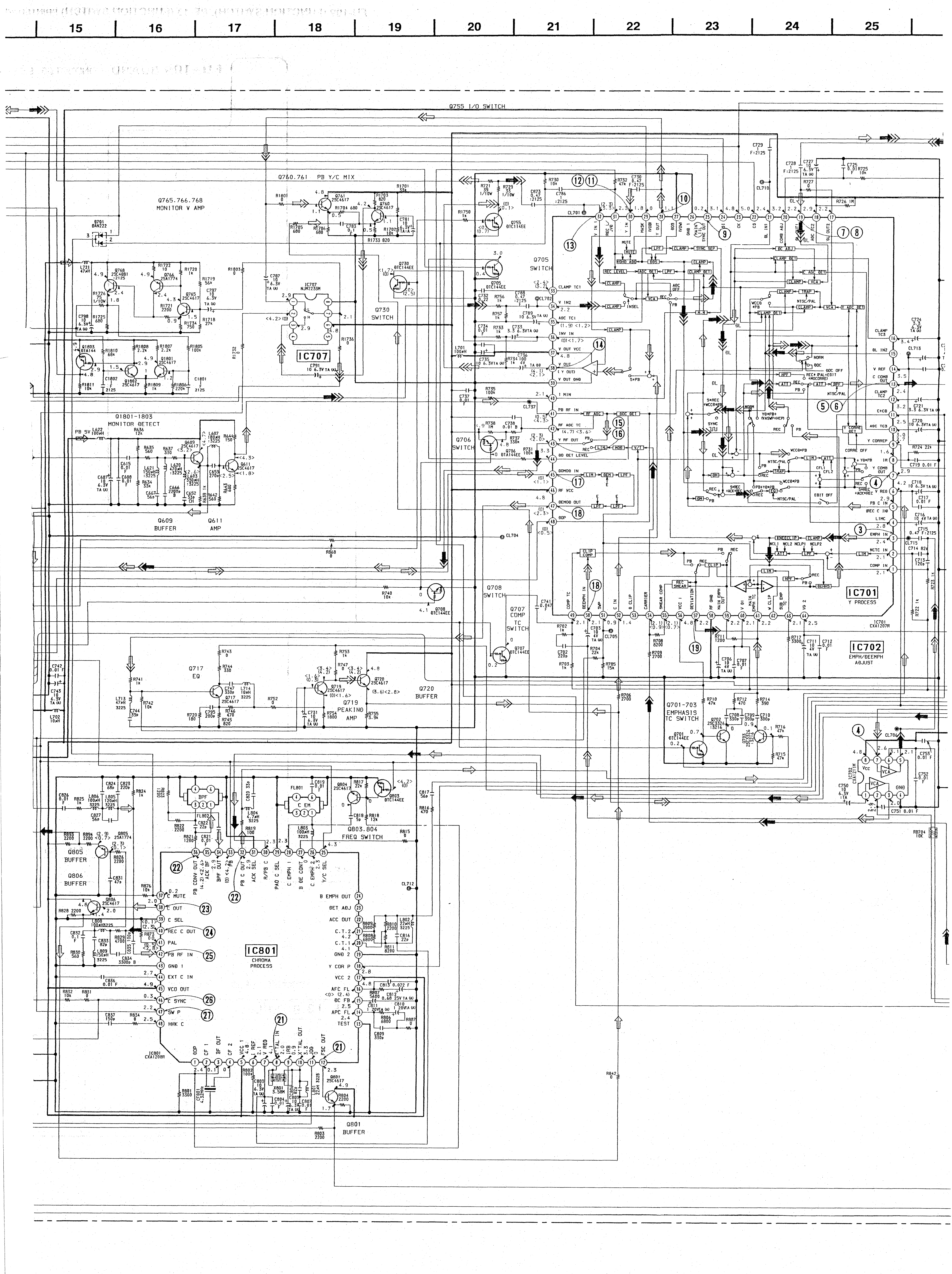
	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	➡»	➡»»	
PB	⇨	⇨»	⇨»»	

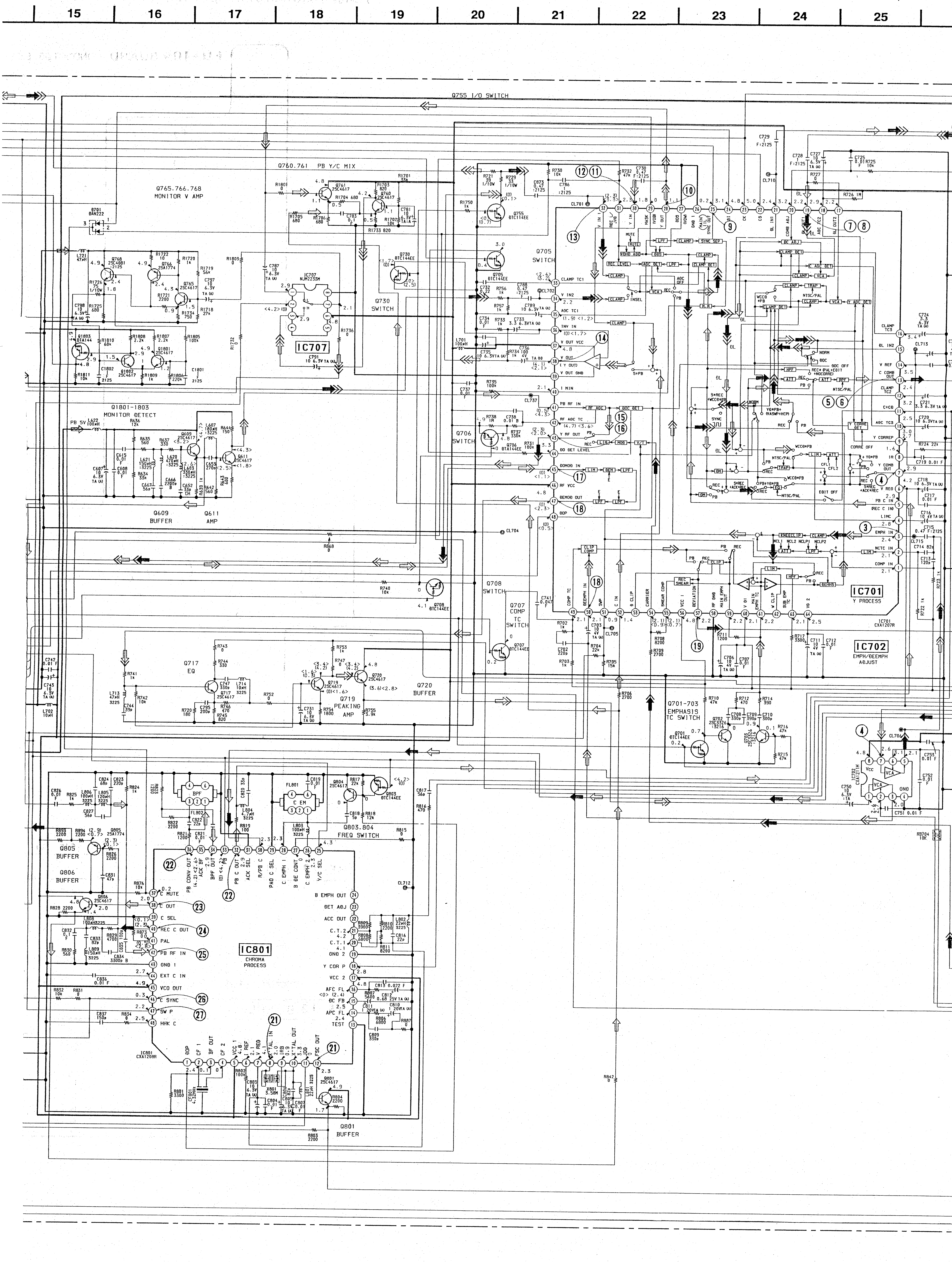

IC801
CXA1208R
PB CONV OUT
C MUTE
C OUT
C SEL
REC C OUT
PAL
PB C RF IN
GND 1
EXT C IN
VCO OUT
C SYNC
SWP
HHK C
BDP

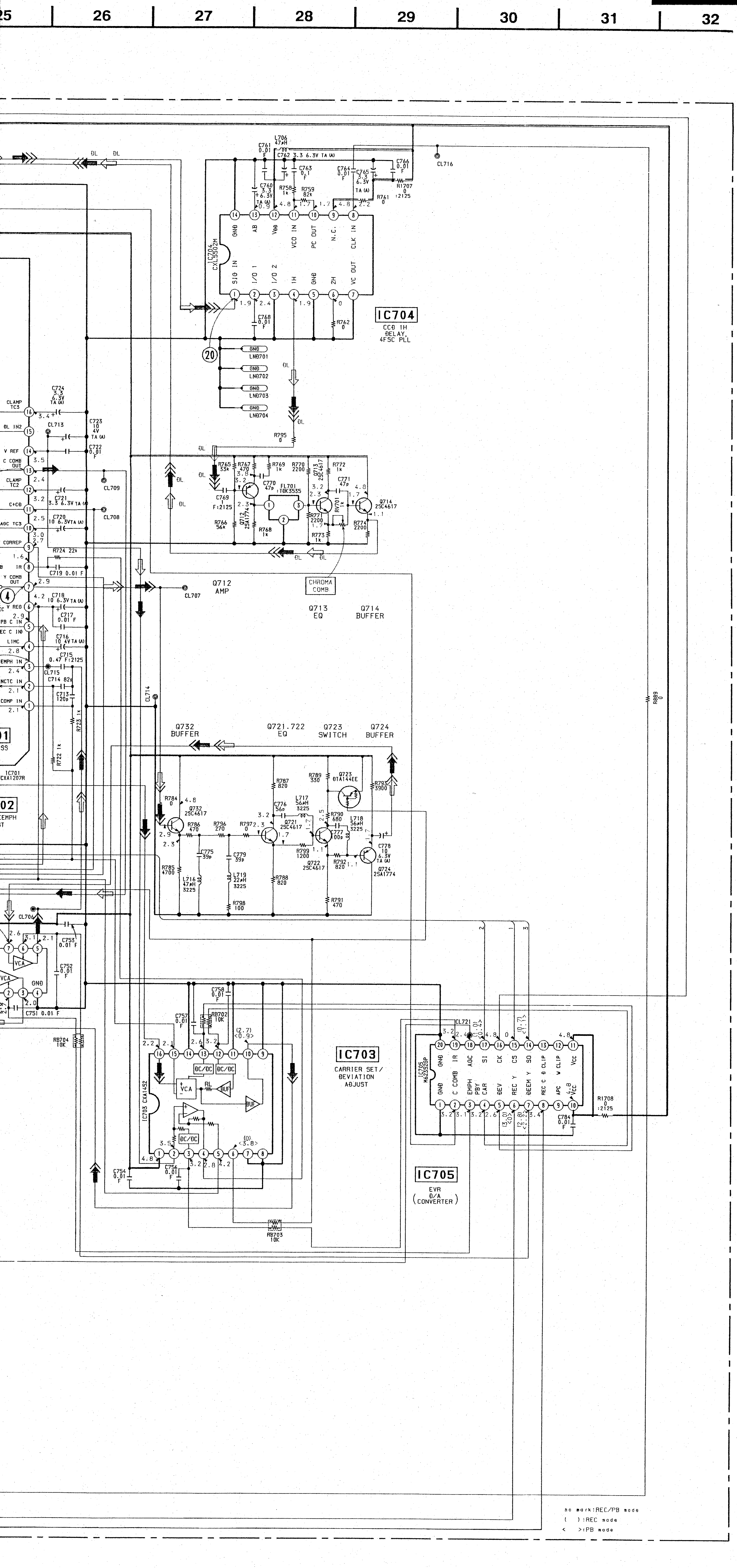
MA-137 BOARD (1/3) (RF, Y/C BLOCK)


IC601 MC10H116
Q629.631.633 OTL
Q627.628 HALF TRAP
IC602 REC Y REC C CONTROL
IC602 CXA1211M
VCC
REC 5V
L633 10μH
PB 5V
L634 10μH
Q619 L/E SWITCH
Q622.1605 FREQUENCY CHARACTER SWITCH
Q621 L/E SWITCH
Q625 DO SWITCH
Q1606 L/E SWITCH
Q623.626.630.632 SOFT LIMITER
Q634 INVERTER
IC603 CX62107
IC603 E/L DISCRIMINATOR
PAL/NT
E/L
SYNC
BDP
VCC
FSC
VBB
Q627 2SC4617
Q628 2SA1774
Q629 2SA1774
Q631 2SC4617
Q633 2SC4617
Q619 DTA114TE
Q622 2SC4617
Q1605 DTC144EE
Q621 DTA114TE
Q623 2SC4617
Q625 DTA114TE
Q1606 DTA114TE
Q626 2SC4617
Q632 2SC4617
D601 1MN10


IC801
CXA1208R
IC801
CHROMA PROCESS
IC602
REC Y
REC C
CONTROL
IC602 CXA1211M
Q627,628
HALF TRAP
Q634
INVERTER
Q1603,1604
REC 5V SWITCH
Q1601,1602
PB 5V SWITCH
Q807
SWITCH
Q806
BUFFER
Q805
BUFFER
Q609
BUFFER
Q611
AMP
Q717
EQ
Q1801-1803
MONITOR DETECT
Q765,766,768
MONITOR V AMP
IC707
TO MA-137 BOARD (5/5)
(See Page 98)
TO MA-137 BOARD (5/5)
(See Page 97)
REC 5V
PB 5V
E MODE
STILL+SLOW
J E DET
ME/HP
RP GND
REC Y
REC C
VA PB MODE
RF SWP
PAL60
P6/P5
D/A2 TO 3
D/A1 TO 2
SP/LP
EDP
CAP ON
ME/HP
PACK 0/1 SEL
E MODE
LINE I/O SEL
JOG VD
JOG
REG GND
VIDEO 5V
+13V
PB RF
RG 5V
RGB C
RGB VIDEO
TU/CAM V GND
TU/CAM VIDEO
MONITOR GND
MONITOR V
VIDEO MUTE
MONITOR DET
V PAKA
VIDEO CS
C SYNC
SO BUS
LINE IN/OUT V GND
LINE IN/OUT V
VID
(Board)
7
8
9
10
11
12
13
14
15
16
17
18


15
16
17
18
19
20
21
22
23
24
25
Q755 I/O SWITCH
Q765.766.768 MONITOR V AMP
Q760.761 PB Y/C MIX
Q705 SWITCH
Q730 SWITCH
IC707 NJM2233M
Q1801-1803 MONITOR DETECT
Q609 BUFFER
Q611 AMP
Q706 SWITCH
Q708 SWITCH
Q707 COMP TC SWITCH
Q717 EQ
Q719 PEAKING AMP
Q720 BUFFER
IC701 Y PROCESS CXA1207R
IC702 EMPH/DEEMPH ADJUST
IC702 CXA1211M
Q701-703 EMPHASIS TC SWITCH
Q805 BUFFER
Q806 BUFFER
Q803.804 FREQ SWITCH
IC801 CHROMA PROCESS CXA1208R
Q801 BUFFER

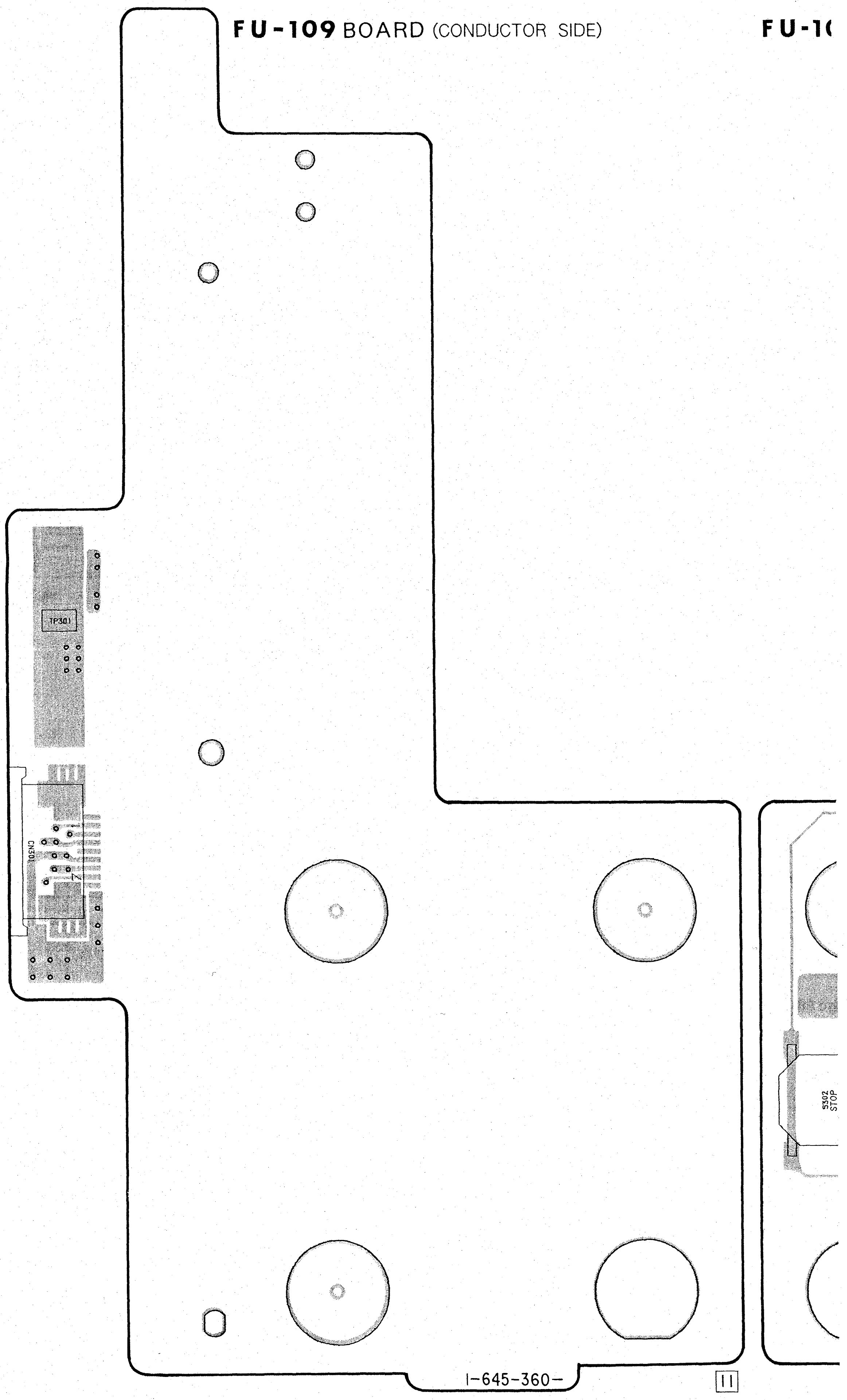

15
16
17
18
19
20
21
22
23
24
25
Q755 I/O SWITCH
Q765.766.768 MONITOR V AMP
Q760.761 PB Y/C MIX
Q705 SWITCH
Q730 SWITCH
IC707 NJM2233M
Q1801-1803 MONITOR DETECT
Q609 BUFFER
Q611 AMP
Q706 SWITCH
Q708 SWITCH
Q707 COMP TC SWITCH
IC701 Y PROCESS CXA1207R
IC702 EMPH/DEEMPH ADJUST CXA1211M
Q701-703 EMPHASIS TC SWITCH
Q717 EQ
Q719 PEAKING AMP
Q720 BUFFER
Q805 BUFFER
Q806 BUFFER
Q803.804 FREQ SWITCH
IC801 CHROMA PROCESS CXA1208R
Q801 BUFFER
CF801 4.43MHz
X801 3.58M


25
26
27
28
29
30
31
32
IC704
CXL5502M
CCD 1H DELAY, 4FSC PLL
SIG IN
I/O 1
I/O 2
IH
GND
2H
VC OUT
CLK IN
N.C.
PC OUT
VCO IN
VDD
AB
GND
(20)
LN0701
LN0702
LN0703
LN0704
CL716
R1707
R795
Q712 AMP
Q713 EQ
Q714 BUFFER
CHROMA COMB
FL701
RV701
CL707
CL714
Q732 BUFFER
Q721.722 EQ
Q723 SWITCH
Q724 BUFFER
2SC4617
2SA1774
DTA144EE
R889
IC703
CXA1452
CARRIER SET/ DEVIATION ADJUST
VCA
BUF
DC/DC
IC705
M62352GP
EVR D/A (CONVERTER)
GND
C COMB
EMPH PBY CAR
DEV
REC Y
DEEM Y
REC C
APC
Vcc
IR
AGC
SI
CK
CS
SO
D CLIP
W CLIP
CL721
R1708
C784
RB703
RB702
RB704
IC701
CXA1207R
CLAMP TC3
DL IN2
V REF
C COMB OUT
CLAMP TC2
C+CB
AGC TC3
CORREP
IR
Y COMB OUT
Y REG
PB C IN
REC C IN
LIMC
EMPH IN
NCTC IN
COMP IN
CL706
CL708
CL709
CL713
DL
no mark:REC/PB mode
(   ):REC mode
<   >:PB mode

FU-109 (FUNCTION SWITCH), PE-13 (FUNCTION SWITCH) PRINTED WIRING BOARDS

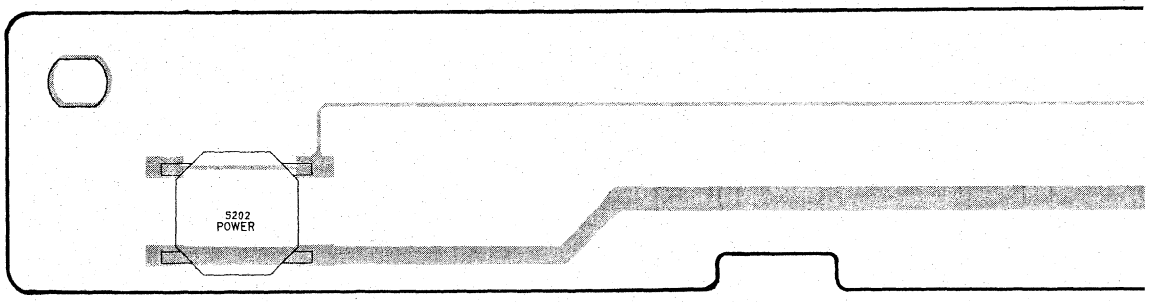
FU-109 BOARD (CONDUCTOR SIDE)

FU-1(

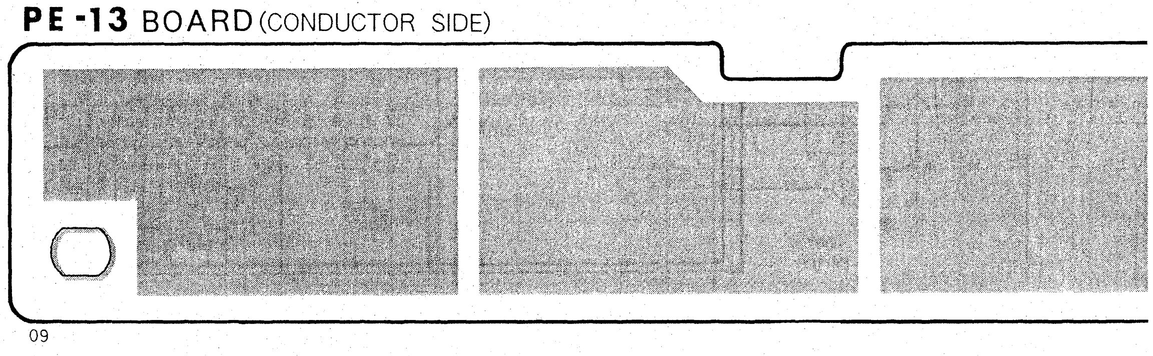


TP301
CN301
1
7
S302
STOP
1-645-360-
11

PE-13 BOARD (COMPONENT SIDE)



PE-13 BOARD (CONDUCTOR SIDE)

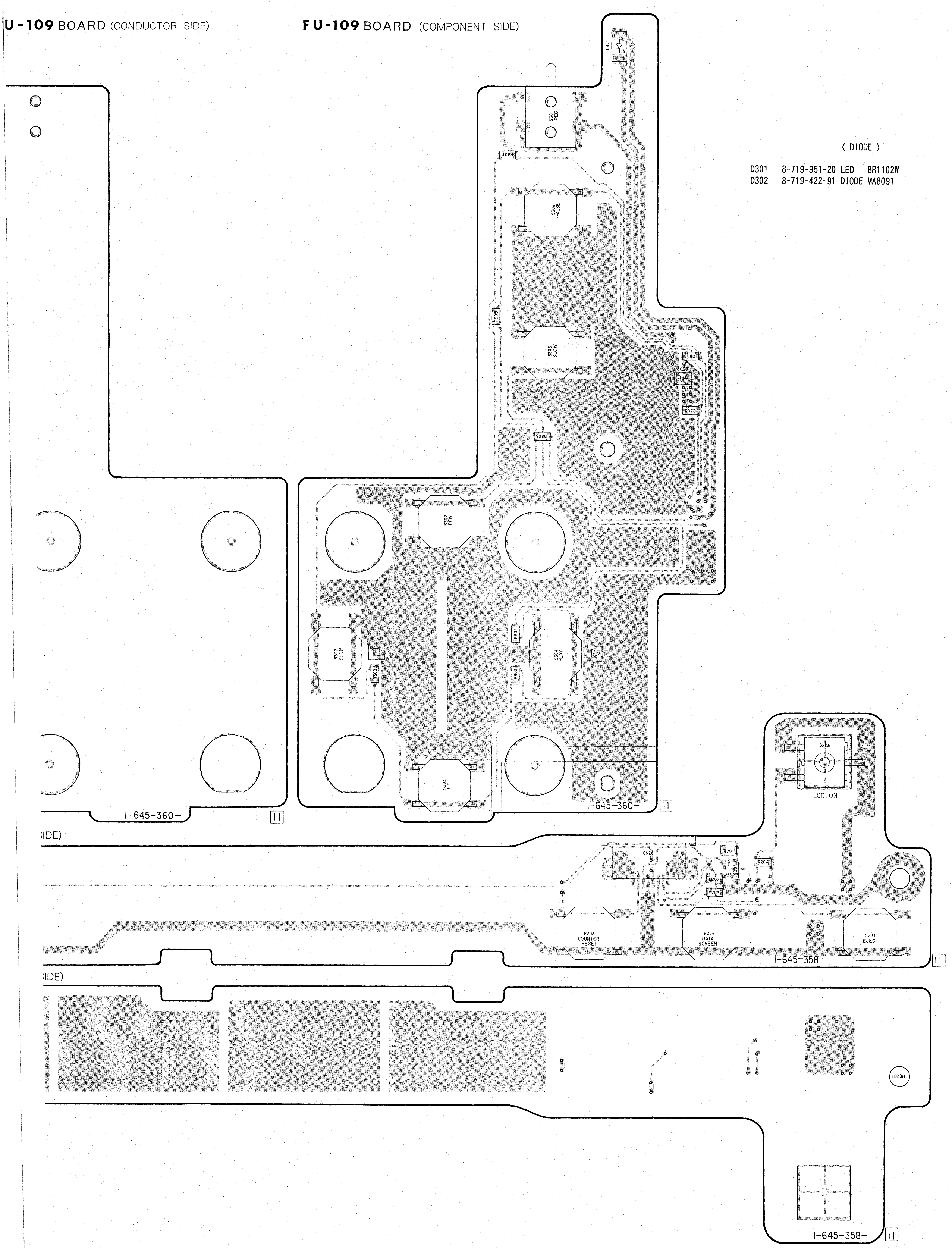


-88- -89-

PE-13 (FUNCTION SWITCH) PRINTED WIRING BOARDS

U-109 BOARD (CONDUCTOR SIDE)

FU-109 BOARD (COMPONENT SIDE)

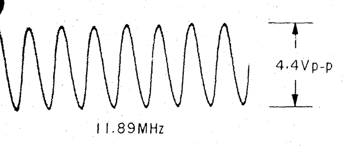

D301
S301
REC
R301
S306
PAUSE
R309
S305
SLOW
C301
D302
C302
R306
S307
REW
S302
STOP
R302
R304
S304
PLAY
R303
S303
FF
1-645-360-
11
S206
LCD ON
CN201
R201
C201
C204
C202
C203
S203
COUNTER
RESET
S204
DATA
SCREEN
S201
EJECT
1-645-358-
IDE)
LN0201

(DIODE)

D301 8-719-951-20 LED BR1102W
D302 8-719-422-91 DIODE MA8091

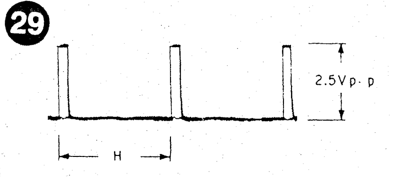
MA-137 BOARD (2/3)

㉘



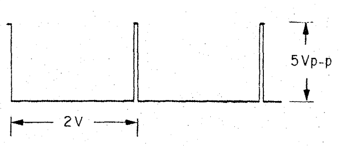
IC101 ㊵ REC/PB

㉙



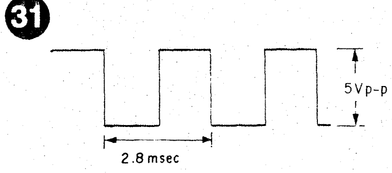
IC101 (64) REC/PB

㉚



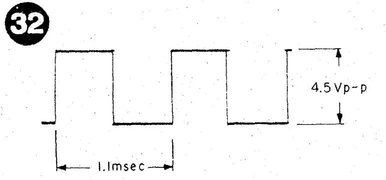
IC101 (66) REC/PB

㉛



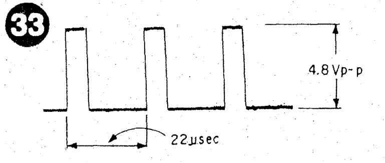
IC101 (67) REC/PB

㉜



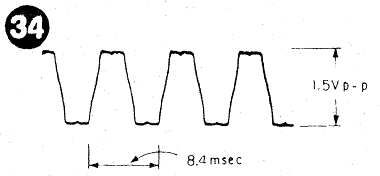
IC101 (68) REC/PB

㉝



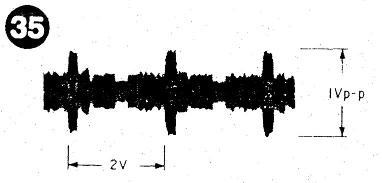
IC101 (73), (75) REC/PB

㉞



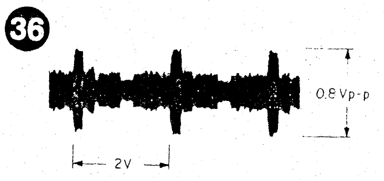
IC103 ⑭, ⑯, ⑱ REC/PB

㉟



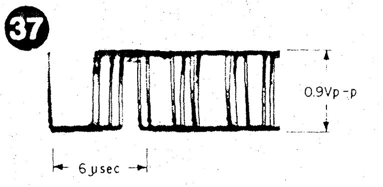
IC301 ⑥ PB

㊱



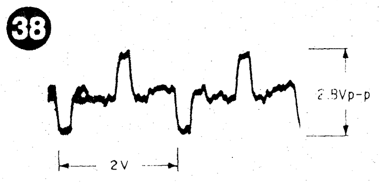
IC301 ⑦ PB

㊲



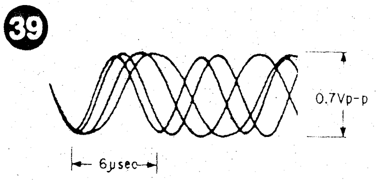
IC301 ⑨ REC/PB

㊳



IC301 ⑮ PB

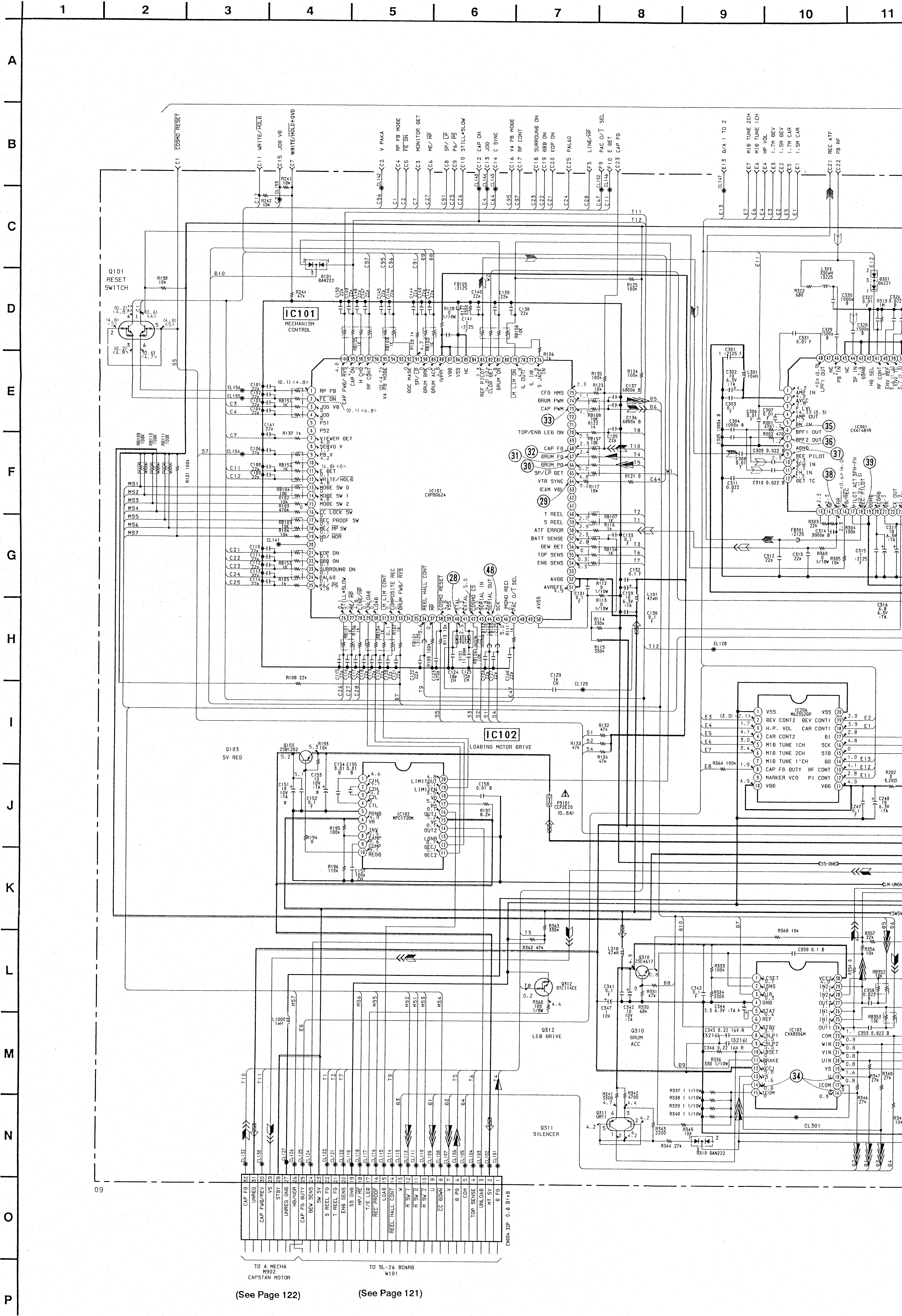
㊴



IC301 ⑱ REC

MA-137 (SERVO/SYSTEM CONTROL), FU-109 (FUNCTION SWITCH), PE-13 (FUNCTION SWITCH) SCHEMATIC DIAGRAMS

• Refer to page 79 for Printed Wiring Boar



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A
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C
D
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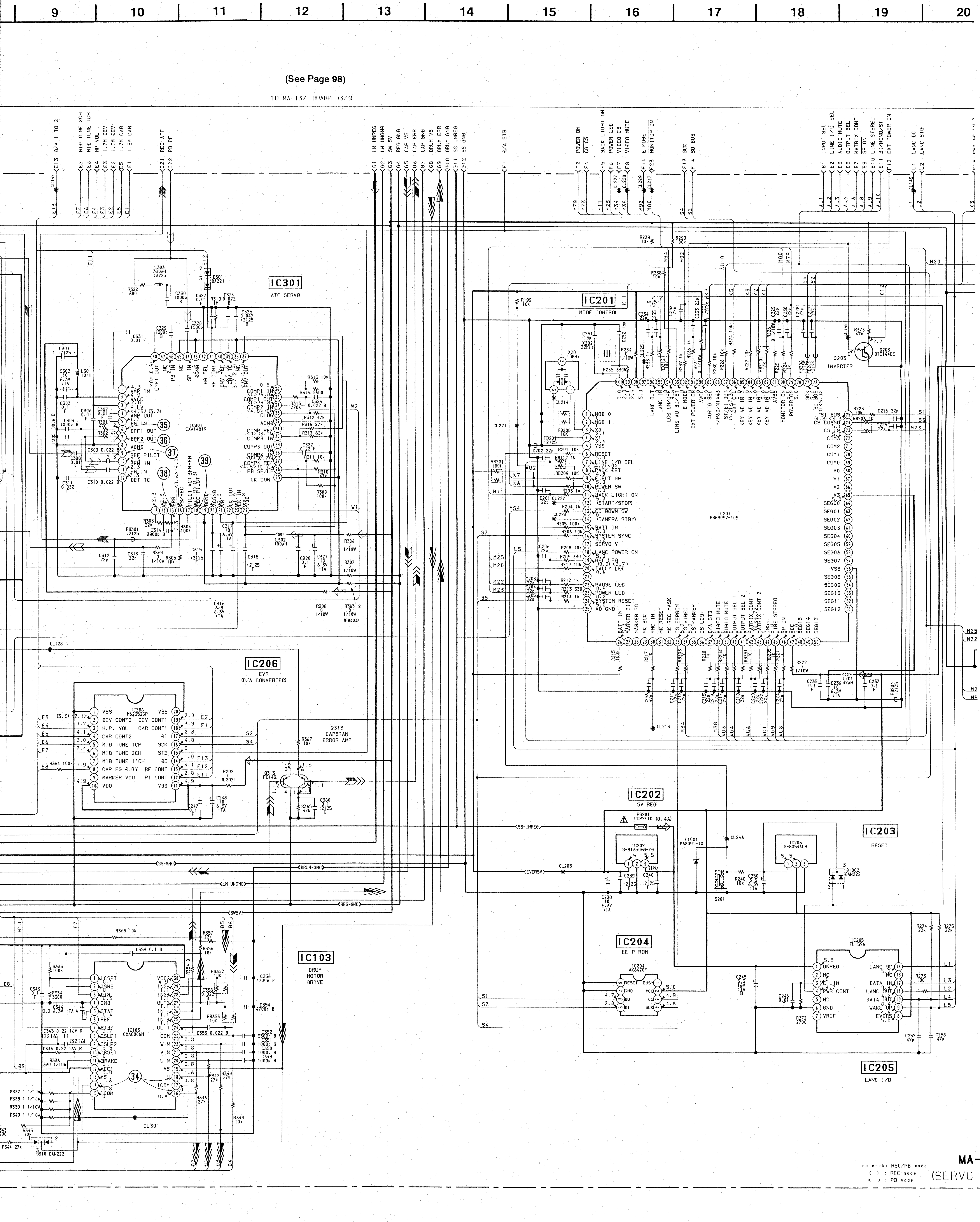
H
I
J
K
L
M
N
O
P
IC101
MECHANISM CONTROL
IC101 CXP80624
IC102
LOADING MOTOR DRIVE
IC102 MPC1720M
IC103 CXA8006M
IC206 M62352GP
IC301 CXA1481R
Q101 RESET SWITCH
Q103 5V REG
Q103 2SB1202
Q310 DRUM ACC
Q310 2SC4617
Q311 SILENCER
Q311 UMT1
Q312 LED DRIVE
Q312 DTC114EE
D101 DAN222
D310 DAN222
D301 DA221
PS101 CCP2E20 (0.8A)
C1 COSMO RESET
C11 WRITE/HOLD
C15 JOG VD
C7 WRITE/HOLD+QVD
C2 V PAKA
C4 RP PB MODE
C5 FE ON
C3 MONITOR DET
C6 ME/ MP
C8 SP/ LP
C9 P6/ P5
C10 STILL+SLOW
C12 CAP ON
C13 JOG
C14 C SYNC
C16 VA PB MODE
C17 RF CONT
C18 SURROUND ON
C19 DBB ON
C20 KOP ON
C25 PAL60
F3 LINE/HP
F9 PAC O/T SEL
F10 E DET
C23 CAP FG
E13 D/A 1 TO 2
E7 MID TUNE 2CH
E6 MID TUNE 1CH
E4 HP VOL
E3 1.7M DEV
E2 1.5M DEV
E5 1.7M CAR
E1 1.5M CAR
C21 REC ATF
C22 PB RF
CAP FG 32
UNREG 31
CAP FWD/REV 30
VS 29
STBY 28
UNREG GND 27
HG/NDR 26
CAP FG DUTY 25
DEW SENS 24
SW 5V 23
S REEL FG 22
T REEL FG 21
END SENS 20
SS GND 19
MP/ME 18
T/E LED 17
REC PROOF 16
LOAD 15
REEL HALL CONT 14
W 13
M SW 1 12
M SW 0 11
M SW 2 10
U 9
CC DOWN 8
V 7
D PG 6
COM 5
TOP SENSE 4
UNLOAD 3
MT 5V 2
D FG 1
CN004 32P 0.8 B to B
TO A MECHA M902 CAPSTAN MOTOR
TO SL-26 BOARD W101
(See Page 122)
(See Page 121)

- Refer to page 79 for Printed Wiring Board. (MA-137 Board)



9
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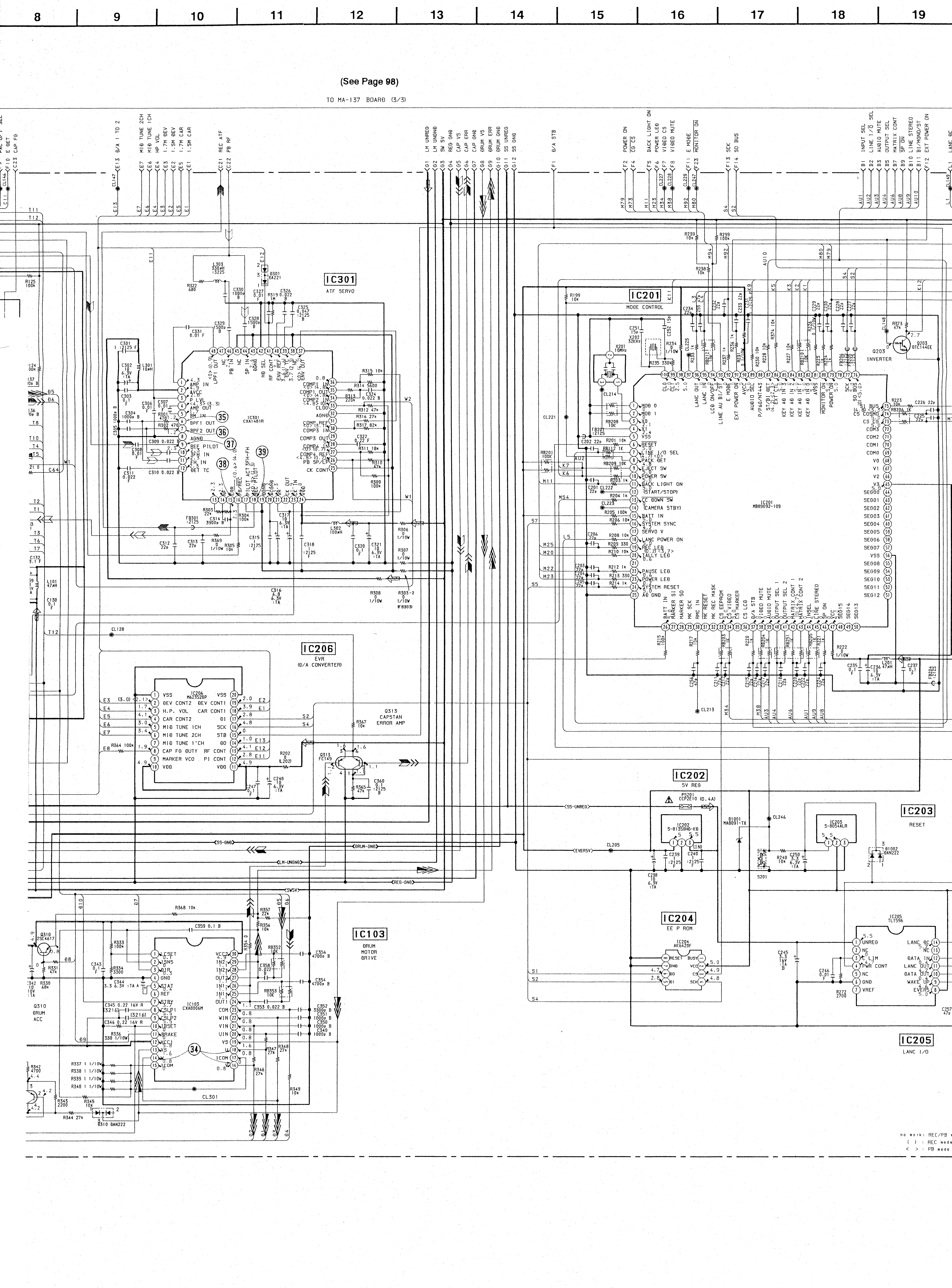
(See Page 98)
TO MA-137 BOARD (3/3)
E13 Ð/A 1 TO 2
E7 MIÐ TUNE 2CH
E6 MIÐ TUNE 1CH
E4 HP VOL
E3 1.7M ÐEV
E2 1.5M ÐEV
E5 1.7M CAR
E1 1.5M CAR
C21 REC ATF
C22 PB RF
G1 LM UNREG
G2 LM UNGNÐ
G3 SW 5V
G4 REG GNÐ
G5 CAP VS
G6 CAP ERR
G7 CAP GNÐ
G8 ÐRUM VS
G9 ÐRUM ERR
G10 ÐRUM GNÐ
G11 SS UNREG
G12 SS GNÐ
F1 Ð/A STB
F2 POWER ON
F4 CG CS
F5 BACK LIGHT ON
F6 POWER LED
F7 VIDEO CS
F8 VIDEO MUTE
F11 E MODE
F23 MONITOR ON
F13 SCK
F14 SO BUS
B1 INPUT SEL
B2 LINE I/O SEL
B3 AUDIO MUTE
B5 OUTPUT SEL
B7 MATRIX CONT
B9 SP ON
B10 LINE STEREO
B11 BI/MONO/ST
F12 EXT POWER ON
L1 LANC DC
L2 LANC SIG
IC301 ATF SERVO
IC301 CXA1481R
IC201 MODE CONTROL
IC201 MB89092-109
Q203 INVERTER
IC206 EVR (Ð/A CONVERTER)
IC206 M62352GP
Q313 CAPSTAN ERROR AMP
IC202 5V REG
IC202 S-81350HG-KD
IC203 RESET
IC203 S-8054ALR
IC204 EE P ROM
IC204 AK6420F
IC205 LANC I/O
IC205 TL1596
IC103 DRUM MOTOR DRIVE
IC103 CXA8006M

no mark: REC/PB mode
( ) : REC mode
< > : PB mode

MA-
(SERVO

C DIAGRAMS • Refer to page 79 for Printed Wiring Board. (MA-137 Board)


8
9
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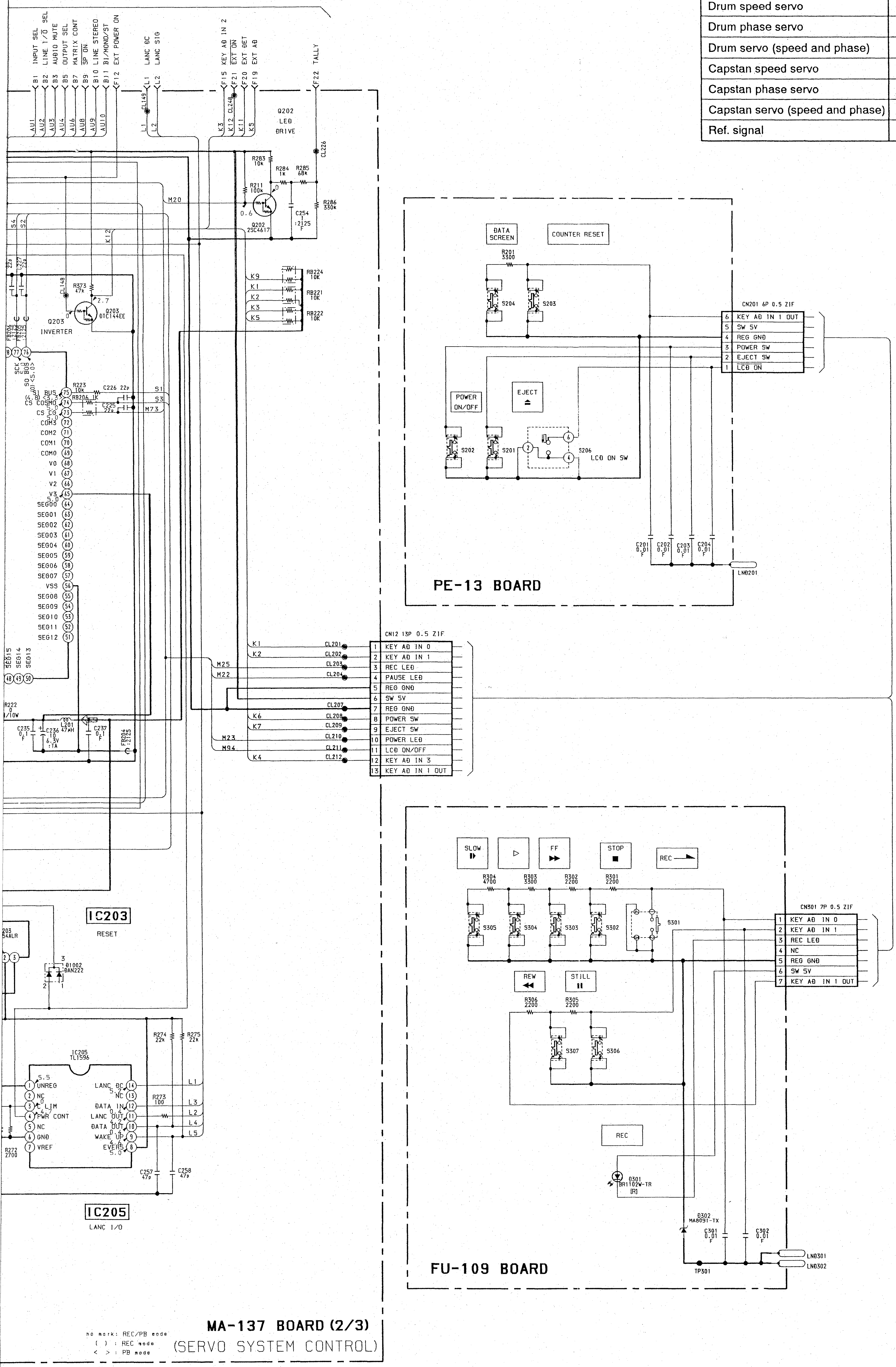
13
14
15
16
17
18
19
(See Page 98)
TO MA-137 BOARD (3/3)
E13 D/A 1 TO 2
E7 MID TUNE 2CH
E6 MID TUNE 1CH
E4 HP VOL
E3 1.7M DEV
E2 1.5M DEV
E5 1.7M CAR
E1 1.5M CAR
C21 REC ATF
C22 PB RF
G1 LM UNREG
G2 LM UNGND
G3 SW 5V
G4 REG GND
G5 CAP VS
G6 CAP ERR
G7 CAP GND
G8 DRUM VS
G9 DRUM ERR
G10 DRUM GND
G11 SS UNREG
G12 SS GND
F1 D/A STB
F2 POWER ON
F4 CG CS
F5 BACK LIGHT ON
F6 POWER LED
F7 VIDEO CS
F8 VIDEO MUTE
F11 E MODE
F23 MONITOR ON
F13 SCK
F14 SO BUS
B1 INPUT SEL
B2 LINE I/O SEL
B3 AUDIO MUTE
B5 OUTPUT SEL
B7 MATRIX CONT
B9 SP ON
B10 LINE STEREO
B11 BI/MONO/ST
F12 EXT POWER ON
L1 LANC BC
F10 E DET
C23 CAP FG
IC301
ATF SERVO
IC301 CXA1481R
IC201
MODE CONTROL
IC201 MB89092-109
IC206
EVR
(D/A CONVERTER)
IC206 M62352DP
Q313
CAPSTAN
ERROR AMP
IC202
5V REG
IC202 S-81350HG-KD
IC203
RESET
IC203 S-8054ALR
IC204
EE P ROM
IC204 AK6420F
IC205
LANC I/O
IC205 TL1596
IC103
DRUM
MOTOR
DRIVE
IC103 CXA8006M
Q310
DRUM
ACC
Q203
INVERTER
D1001 MA8091-TX
D1002 DAN222
D310 DAN222
D301 DA221
PS201 CCP2E10 (0.4A)
X201 32KHz
X202 10MHz
no mark: REC/PB mode
( ) : REC mode
< > : PB mode

- **SIGNAL PATH**

	REC	REC/PB	PB
Drum speed servo		▷	
Drum phase servo		▷▷	
Drum servo (speed and phase)		▷▷▷	
Capstan speed servo			
Capstan phase servo			
Capstan servo (speed and phase)		▷»»	
Ref. signal	▶	▷	⊃

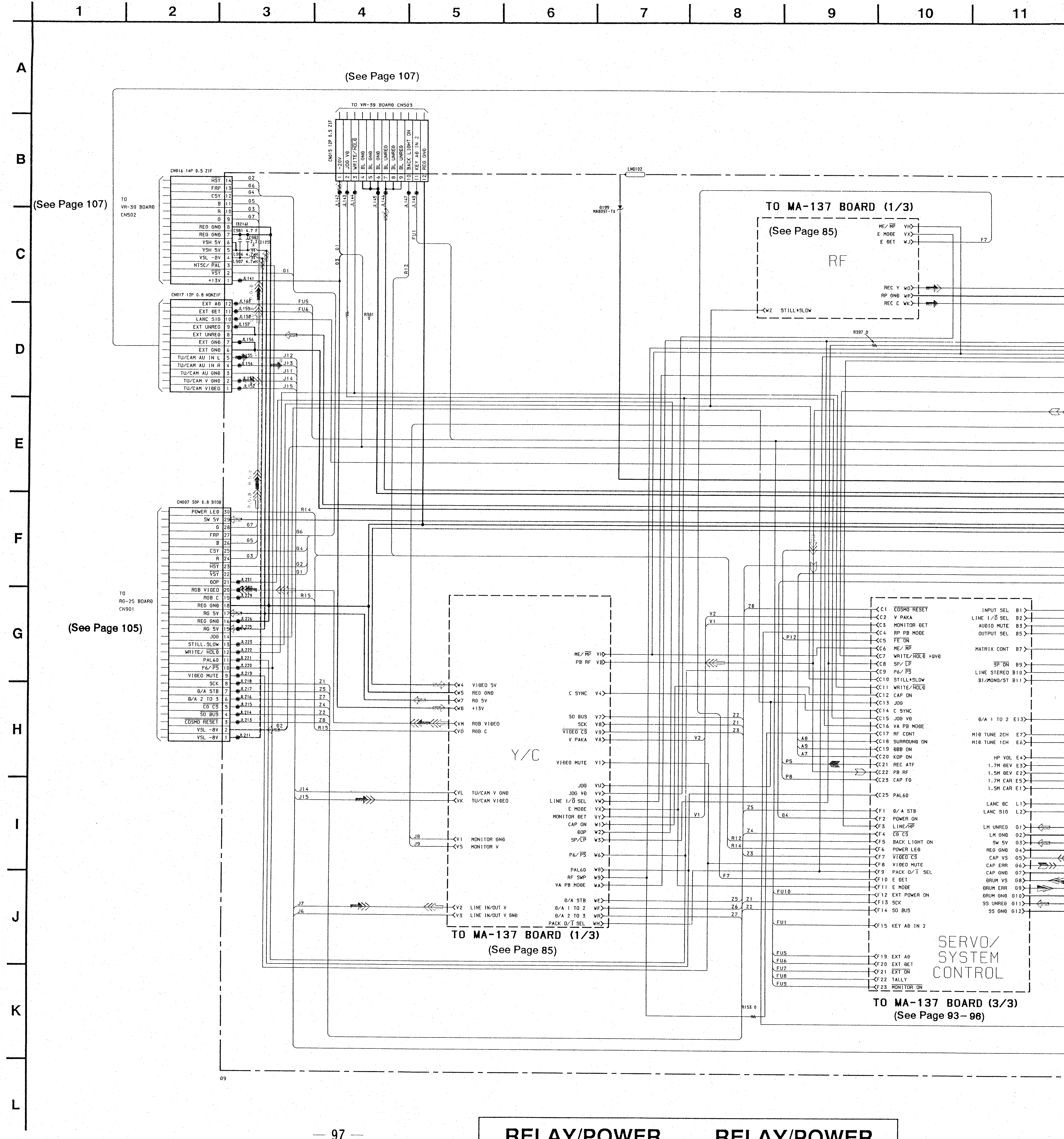

B1 INPUT SEL
B2 LINE I/O SEL
B3 AUDIO MUTE
B5 OUTPUT SEL
B7 MATRIX CONT
B9 SP ON
B10 LINE STEREO
B11 BI/MONO/ST
F12 EXT POWER ON
L1 LANC DC
L2 LANC SIG
F15 KEY AD IN 2
F21 EXT ON
F20 EXT DET
F19 EXT AD
F22 TALLY
AU1
AU2
AU3
AU4
AU6
AU8
AU9
AU10
CL149
CL248
K3
K12
K11
K5
Q202 LED DRIVE
CL226
R283 10k
R284 1k
R285 68k
R211 100k
R286 330k
C254 1 :2125 F
Q202 2SC4617
M20
S4
S2
K12
CL148
R373 47k
Q203 DTC144EE
Q203 INVERTER
FB206 :2125
FB205 :2125
C227 22p
SCK
SO BUS
SI BUS
CS COSMO
CS CG
R223 10k
RB206 1K
C226 22p
C225 22p
S1
S3
M73
COM3
COM2
COM1
COM0
V0
V1
V2
V3
SEG00
SEG01
SEG02
SEG03
SEG04
SEG05
SEG06
SEG07
VSS
SEG08
SEG09
SEG10
SEG11
SEG12
SEG15
SEG14
SEG13
K9
K1
K2
K3
K5
RB224 10K
RB221 10K
RB222 10K
R222 0 1/10W
C235 0.1 F
C236 10 6.3V :TA
L201 47µH
C237 0.1 F
FB204 :2125
M25
M22
M23
M94
K1
K2
K6
K7
K4
CL201
CL202
CL203
CL204
CL207
CL208
CL209
CL210
CL211
CL212
CN12 13P 0.5 ZIF
1 KEY AD IN 0
2 KEY AD IN 1
3 REC LED
4 PAUSE LED
5 REG GND
6 SW 5V
7 REG GND
8 POWER SW
9 EJECT SW
10 POWER LED
11 LCD ON/OFF
12 KEY AD IN 3
13 KEY AD IN 1 OUT
IC203
RESET
D1002 DAN222
IC205 TL1596
UNREG
NC
C LIM
PWR CONT
NC
GND
VREF
LANC DC
NC
DATA IN
LANC OUT
DATA OUT
WAKE UP
EVER5
R272 2700
R273 100
R274 22k
R275 22k
C257 47p
C258 47p
L1
L3
L2
L4
L5
IC205
LANC I/O
DATA SCREEN
COUNTER RESET
R201 3300
S204
S203
POWER ON/OFF
EJECT
S202
S201
S206
LCD ON SW
C201 0.01 F
C202 0.01 F
C203 0.01 F
C204 0.01 F
LND201
CN201 6P 0.5 ZIF
6 KEY AD IN 1 OUT
5 SW 5V
4 REG GND
3 POWER SW
2 EJECT SW
1 LCD ON
PE-13 BOARD
SLOW
FF
STOP
REC
R304 4700
R303 3300
R302 2200
R301 2200
S305
S304
S303
S302
S301
REW
STILL
R306 2200
R305 2200
S307
S306
REC
D301 BR1102W-TR (R)
D302 MA8091-TX
C301 0.01 F
C302 0.01 F
TP301
LND301
LND302
CN301 7P 0.5 ZIF
1 KEY AD IN 0
2 KEY AD IN 1
3 REC LED
4 NC
5 REG GND
6 SW 5V
7 KEY AD IN 1 OUT
FU-109 BOARD

MA-137 BOARD (2/3)
(SERVO SYSTEM CONTROL)

no mark: REC/PB mode
( ) : REC mode
< > : PB mode

MA-137 (RELAY/POWER), FP-621 (A/V OUTPUT JACK), HP-84 (HEADPHONE JACK), JK-86 (TUNER INPUT JACK) SCHEMATIC DIAGRAMS

• Refer to page 79 for Pri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7
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9
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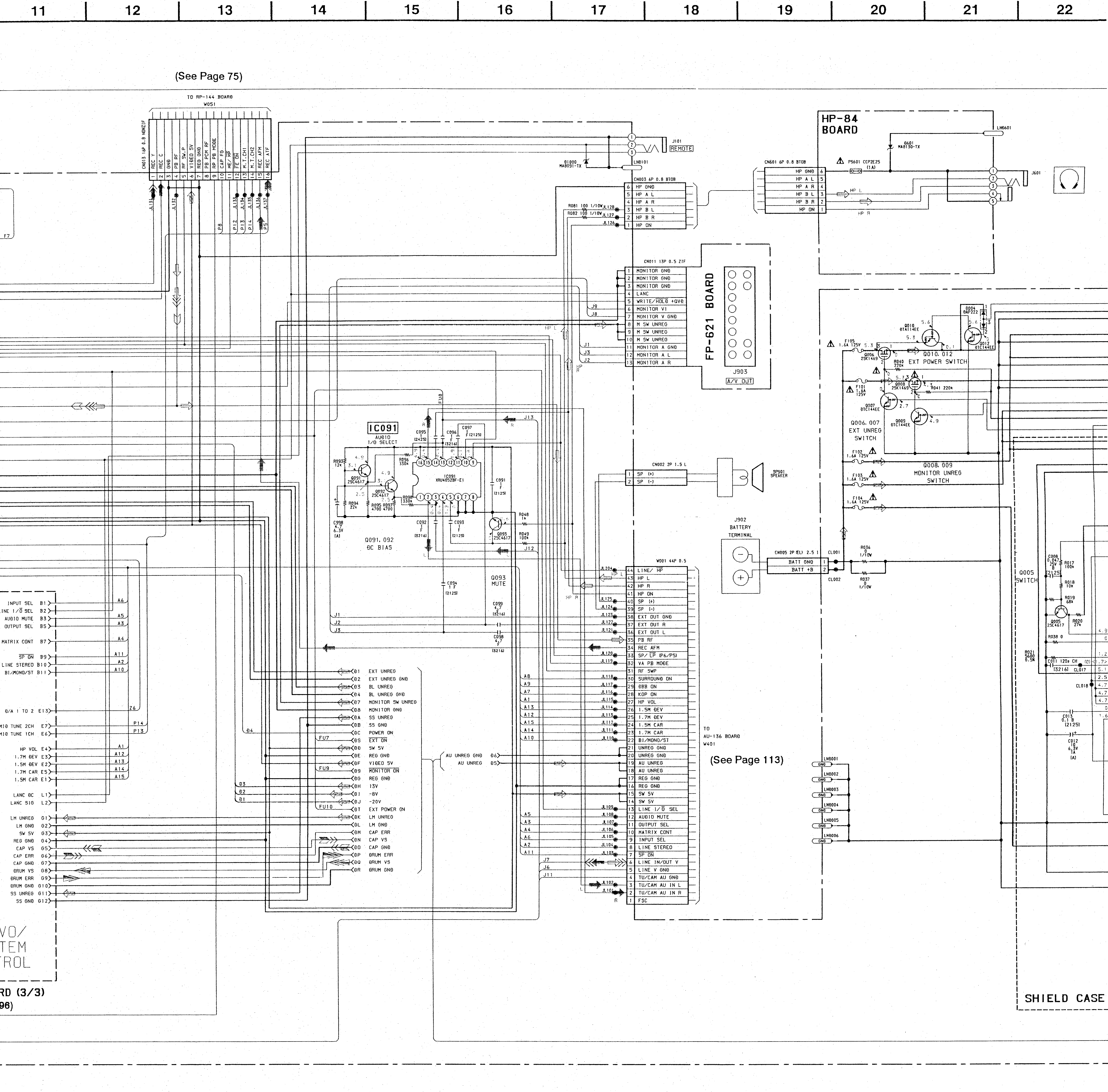
11
A
B
C
D
E
F
G
H
I
J
K
L
(See Page 107)
TO VR-39 BOARD CN503
CN015 12P 0.5 ZIF
1 -20V
2 JOG VD
3 WRITE/HOLD
4 BL GND
5 BL GND
6 BL GND
7 BL UNREG
8 BL UNREG
9 BL UNREG
10 BACK LIGHT ON
11 KEY AD IN 2
12 REG GND
JL142
JL143
JL144
JL145
JL146
JL147
JL149
(See Page 107)
TO VR-39 BOARD CN502
CN016 14P 0.5 ZIF
14 HSY
13 FRP
12 CSY
11 B
10 R
9 G
8 REG GND
7 REG GND
6 VSH 5V
5 VSH 5V
4 VSL -8V
3 NTSC/PAL
2 VSY
1 +13V
(3216)
C981 4.7 F
C982 2.2 F
(2125)
L906 4.7μH
L907 4.7μH
JL141
CN017 12P 0.8 NONZIF
12 EXT AD
11 EXT DET
10 LANC SIG
9 EXT UNREG
8 EXT UNREG
7 EXT GND
6 EXT GND
5 TU/CAM AU IN L
4 TU/CAM AU IN R
3 TU/CAM AU GND
2 TU/CAM V GND
1 TU/CAM VIDEO
JL160
JL159
JL158
JL157
JL156
JL155
JL154
JL153
JL152
R381 0
LN0102
D199 MA8051-TX
R397 0
R153 0
TO RG-25 BOARD CN901
(See Page 105)
CN007 30P 0.8 BTOB
30 POWER LED
29 SW 5V
28 G
27 FRP
26 B
25 CSY
24 R
23 HSY
22 VSY
21 DOP
20 RGB VIDEO
19 RGB C
18 REG GND
17 RG 5V
16 REG GND
15 RG 5V
14 JOG
13 STILL.SLOW
12 WRITE/HOLD
11 PAL60
10 P6/P5
9 VIDEO MUTE
8 SCK
7 D/A STB
6 D/A 2 TO 3
5 CG CS
4 SO BUS
3 COSMO RESET
2 VSL -8V
1 VSL -8V
JL231
JL230
JL229
JL226
JL225
JL223
JL222
JL221
JL220
JL219
JL218
JL217
JL216
JL215
JL214
JL213
JL211
TO MA-137 BOARD (1/3)
(See Page 85)
RF
ME/MP VH
E MODE VX
E DET WJ
REC Y WO
RP GND WP
REC C WK
WZ STILL*SLOW
Y/C
W4 VIDEO 5V
W5 REG GND
W7 RG 5V
WB +13V
VM RGB VIDEO
VO RGB C
VL TU/CAM V GND
VK TU/CAM VIDEO
V1 MONITOR GND
V5 MONITOR V
V2 LINE IN/OUT V
V3 LINE IN/OUT V GND
ME/MP VH
PB RF VB
C SYNC V4
SO BUS V7
SCK V8
VIDEO CS V9
V PAKA VA
VIDEO MUTE VI
JOG VU
JOG VD VV
LINE I/O SEL VW
E MODE VX
MONITOR DET VY
CAP ON W1
DOP W2
SP/LP W3
P6/P5 W6
PAL60 W8
RF SWP W9
VA PB MODE WA
D/A STB WE
D/A 1 TO 2 WF
D/A 2 TO 3 WR
PACK O/I SEL WH
TO MA-137 BOARD (1/3)
(See Page 85)
SERVO/ SYSTEM CONTROL
C1 COSMO RESET
C2 V PAKA
C3 MONITOR DET
C4 RP PB MODE
C5 FE ON
C6 ME/MP
C7 WRITE/HOLD +QVD
C8 SP/LP
C9 P6/P5
C10 STILL*SLOW
C11 WRITE/HOLD
C12 CAP ON
C13 JOG
C14 C SYNC
C15 JOG VD
C16 VA PB MODE
C17 RF CONT
C18 SURROUND ON
C19 DBB ON
C20 KOP ON
C21 REC ATF
C22 PB RF
C23 CAP FG
C25 PAL60
F1 D/A STB
F2 POWER ON
F3 LINE/HP
F4 CG CS
F5 BACK LIGHT ON
F6 POWER LED
F7 VIDEO CS
F8 VIDEO MUTE
F9 PACK O/I SEL
F10 E DET
F11 E MODE
F12 EXT POWER ON
F13 SCK
F14 SO BUS
F15 KEY AD IN 2
F19 EXT AD
F20 EXT DET
F21 EXT ON
F22 TALLY
F23 MONITOR ON
INPUT SEL B1
LINE I/O SEL B2
AUDIO MUTE B3
OUTPUT SEL B5
MATRIX CONT B7
SP ON B9
LINE STEREO B10
BI/MONO/ST B11
D/A 1 TO 2 E13
MID TUNE 2CH E7
MID TUNE 1CH E6
HP VOL E4
1.7M DEV E3
1.5M DEV E2
1.7M CAR E5
1.5M CAR E1
LANC DC L1
LANC SIG L2
LM UNREG G1
LM GND G2
SW 5V G3
REG GND G4
CAP VS G5
CAP ERR G6
CAP GND G7
DRUM VS G8
DRUM ERR G9
DRUM GND G10
SS UNREG G11
SS GND G12
TO MA-137 BOARD (3/3)
(See Page 93-96)

to page 79 for Printed Wiring Board. (MA-137 Board)


11
12
13
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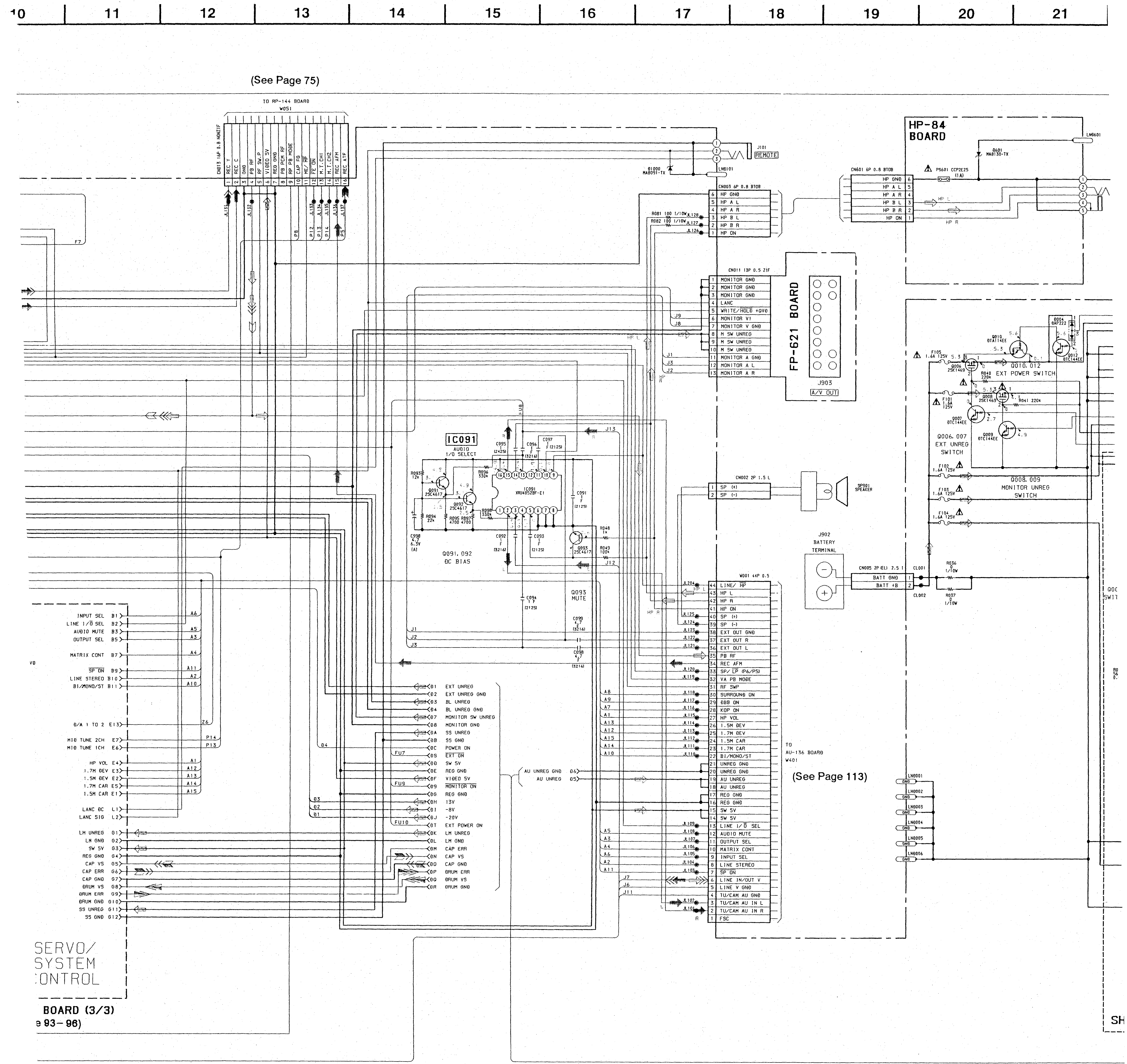
16
17
18
19
20
21
22
(See Page 75)
TO RP-144 BOARD
W051
CN013 16P 0.8 NONZIF
REC Y
REC C
GND
PB RF
RF SW.P
VIDEO 5V
REG GND
PB PCM RF
RP PB MODE
CAP FG
HE/ HP
FE ON
M.T.CH1
M.T.CH2
REC AFM
REC ATF
J101
REMOTE
HP-84
BOARD
CN601 6P 0.8 BTOB
CN903 6P 0.8 BTOB
HP GND
HP A L
HP A R
HP B L
HP B R
HP ON
J601
FP-621 BOARD
CN011 13P 0.5 ZIF
MONITOR GND
LANC
WRITE/HOLD +QV0
MONITOR V1
MONITOR V GND
M SW UNREG
MONITOR A GND
MONITOR A L
MONITOR A R
J903
A/V OUT
IC091
AUDIO
I/O SELECT
IC091
XRU4052BF-E1
Q091, 092
DC BIAS
Q093
MUTE
CN002 2P 1.5 L
SP (+)
SP (-)
SP901
SPEAKER
J902
BATTERY
TERMINAL
CN005 2P (EL) 2.5 1
BATT GND
BATT +B
W001 44P 0.5
LINE/ HP
HP L
HP R
HP ON
EXT OUT GND
EXT OUT R
EXT OUT L
PB RF
REC AFM
SP/ LP (P6/P5)
VA PB MODE
RF SWP
SURROUND ON
DBB ON
KDP ON
HP VOL
1.5M DEV
1.7M DEV
1.5M CAR
1.7M CAR
BI/MONO/ST
UNREG GND
AU UNREG
REG GND
5V 5V
LINE I/O SEL
AUDIO MUTE
OUTPUT SEL
MATRIX CONT
INPUT SEL
LINE STEREO
SP ON
LINE IN/OUT V
LINE V GND
TU/CAM AU GND
TU/CAM AU IN L
TU/CAM AU IN R
FSC
TO
AU-136 BOARD
W401
(See Page 113)
EXT UNREG
EXT UNREG GND
BL UNREG
BL UNREG GND
MONITOR SW UNREG
MONITOR GND
SS UNREG
SS GND
POWER ON
EXT ON
SW 5V
REG GND
VIDEO 5V
MONITOR ON
13V
-8V
-20V
EXT POWER ON
LM UNREG
LM GND
CAP ERR
CAP VS
CAP GND
DRUM ERR
DRUM VS
DRUM GND
AU UNREG GND
AU UNREG
Q010, 012
EXT POWER SWITCH
Q006, 007
EXT UNREG
SWITCH
Q008, 009
MONITOR UNREG
SWITCH
Q005
SWITCH
SHIELD CASE
INPUT SEL B1
LINE I/O SEL B2
AUDIO MUTE B3
OUTPUT SEL B5
MATRIX CONT B7
SP ON B9
LINE STEREO B10
BI/MONO/ST B11
D/A 1 TO 2 E13
HP VOL E4
1.7M DEV E3
1.5M DEV E2
1.7M CAR E5
1.5M CAR E1
LANC DC L1
LANC SIG L2
LM UNREG G1
LM GND G2
SW 5V G3
REG GND G4
CAP VS G5
CAP ERR G6
CAP GND G7
DRUM VS G8
DRUM ERR G9
DRUM GND G10
SS UNREG G11
SS GND G12
VO/
TEM
ROL
RD (3/3)
96)

- Refer to page 79 for Printed Wiring Board. (MA-137 Board)

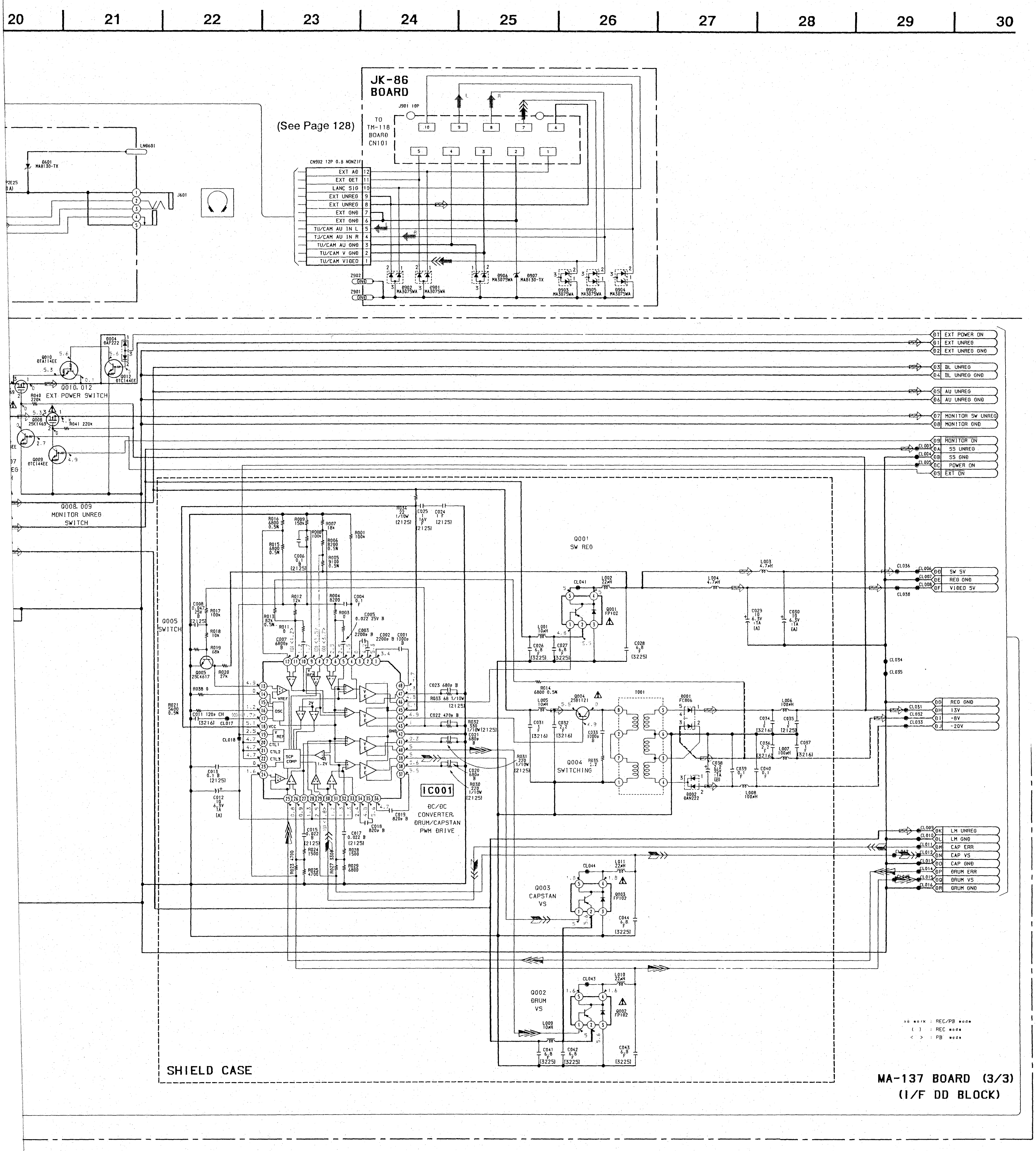

10
11
12
13
14
15
16
17
18
19
20
21
(See Page 75)
TO RP-144 BOARD
W051
CN013 16P 0.8 NONZIF
1 REC Y
2 REC C
3 GND
4 PB RF
5 RF SW.P
6 VIDEO 5V
7 REG GND
8 PB PCM RF
9 RP PB MODE
10 CAP FG
11 ME/ MP
12 FE ON
13 M.T.CH1
14 M.T.CH2
15 REC AFM
16 REC ATF
J101
REMOTE
LN0101
D1000
MA8091-TX
CN003 6P 0.8 BTOB
6 HP GND
5 HP A L
4 HP A R
3 HP B L
2 HP B R
1 HP ON
R081 100 1/10W
R082 100 1/10W
HP-84
BOARD
CN601 6P 0.8 BTOB
HP GND
HP A L
HP A R
HP B L
HP B R
HP ON
PS601 CCP2E25 (1A)
D601 MA8130-TX
LN6601
HP L
HP R
CN011 13P 0.5 ZIF
1 MONITOR GND
2 MONITOR GND
3 MONITOR GND
4 LANC
5 WRITE/HOLD +GVO
6 MONITOR V1
7 MONITOR V GND
8 M SW UNREG
9 M SW UNREG
10 M SW UNREG
11 MONITOR A GND
12 MONITOR A L
13 MONITOR A R
FP-621 BOARD
J903
A/V OUT
IC091
AUDIO
I/O SELECT
IC091
XRU4052BF-E1
Q091, 092
DC BIAS
Q093
MUTE
Q091 2SC4617
Q092 2SC4617
Q093 2SC4617
CN002 2P 1.5 L
1 SP (+)
2 SP (-)
SP001
SPEAKER
J902
BATTERY
TERMINAL
CN005 2P (EL) 2.5 1
BATT GND
BATT +B
CL001
CL002
R036
R037
Q004 2SK1469
Q010 DTA114EE
Q012 DTC144EE
Q010, 012
EXT POWER SWITCH
R040 220k
R041 220k
Q008 2SK1469
Q007 DTC144EE
Q009 DTC144EE
Q006, 007
EXT UNREG
SWITCH
Q008, 009
MONITOR UNREG
SWITCH
F105 1.6A 125V
F101 1.6A 125V
F102 1.6A 125V
F103 1.6A 125V
F104 1.6A 125V
D004 BAP222
W001 44P 0.5
44 LINE/ HP
43 HP L
42 HP R
41 HP ON
40 SP (+)
39 SP (-)
38 EXT OUT GND
37 EXT OUT R
36 EXT OUT L
35 PB RF
34 REC AFM
33 SP/ LP (P4/P5)
32 VA PB MODE
31 RF SWP
30 SURROUND ON
29 BBB ON
28 KOP ON
27 HP VOL
26 1.5M DEV
25 1.7M DEV
24 1.5M CAR
23 1.7M CAR
22 BI/MONO/ST
21 UNREG GND
20 UNREG GND
19 AU UNREG
18 AU UNREG
17 REG GND
16 REG GND
15 SW 5V
14 SW 5V
13 LINE I/O SEL
12 AUDIO MUTE
11 OUTPUT SEL
10 MATRIX CONT
9 INPUT SEL
8 LINE STEREO
7 SP ON
6 LINE IN/OUT V
5 LINE V GND
4 TU/CAM AU GND
3 TU/CAM AU IN L
2 TU/CAM AU IN R
1 FSC
TO
AU-136 BOARD
W401
(See Page 113)
LN0001
LN0002
LN0003
LN0004
LN0005
LN0006
INPUT SEL B1
LINE I/O SEL B2
AUDIO MUTE B3
OUTPUT SEL B5
MATRIX CONT B7
SP ON B9
LINE STEREO B10
BI/MONO/ST B11
D/A 1 TO 2 E13
MID TUNE 2CH E7
MID TUNE 1CH E6
HP VOL E4
1.7M DEV E3
1.5M DEV E2
1.7M CAR E5
1.5M CAR E1
LANC DC L1
LANC SIG L2
LM UNREG G1
LM GND G2
SW 5V G3
REG GND G4
CAP VS G5
CAP ERR G6
CAP GND G7
DRUM VS G8
DRUM ERR G9
DRUM GND G10
SS UNREG G11
SS GND G12
01 EXT UNREG
02 EXT UNREG GND
03 BL UNREG
04 BL UNREG GND
07 MONITOR SW UNREG
08 MONITOR GND
0A SS UNREG
0B SS GND
0C POWER ON
0S EXT ON
0D SW 5V
0E REG GND
0F VIDEO 5V
09 MONITOR ON
0G REG GND
0H 13V
0I -8V
0J -20V
0T EXT POWER ON
0K LM UNREG
0L LM GND
0M CAP ERR
0N CAP VS
0O CAP GND
0P DRUM ERR
0Q DRUM VS
0R DRUM GND
AU UNREG GND 06
AU UNREG 05
FU7
FU9
FU10
SERVO/
SYSTEM
CONTROL
BOARD (3/3)
93-96)
SH

RELA

• **SIGNAL PATH**

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	⇛	⇛»	➡
PB			⇨»	⇨

	REC	REC/PB	PB
Drum speed servo			
Drum phase servo			
Drum servo (speed and phase)		⊳»	
Capstan speed servo			
Capstan phase servo			
Capstan servo (speed and phase)		⊳»	
Ref. signal	➡		⊳


20
21
22
23
24
25
26
27
28
29
30
JK-86 BOARD
(See Page 128)
TO TM-118 BOARD CN101
J901 10P
CN902 12P 0.8 NONZIF
EXT AD 12
EXT DET 11
LANC SIG 10
EXT UNREG 9
EXT UNREG 8
EXT GND 7
EXT GND 6
TU/CAM AU IN L 5
TU/CAM AU IN R 4
TU/CAM AU GND 3
TU/CAM V GND 2
TU/CAM VIDEO 1
Z902 GND
Z901 GND
D902 MA3075WA
D901 MA3075WA
D906 MA3075WA
D907 MA8130-TX
D903 MA3075WA
D905 MA3075WA
D904 MA3075WA
LN6601
D601 MA8130-TX
J601
D004 DAP222
Q010 DTA114EE
Q012 DTC144EE
Q010, 012 EXT POWER SWITCH
R040 220k
R041 220k
Q008 2SK1469
Q009 DTC144EE
Q008, 009 MONITOR UNREG SWITCH
Q005 SWITCH
Q005 2SC4617
SHIELD CASE
IC001
DC/DC CONVERTER, DRUM/CAPSTAN PWM DRIVE
Q001 SW REG
Q001 FP102
L001 10µH
L002 22µH
L003 4.7µH
L004 4.7µH
C029 10 6.3V :TA [A]
C030 10 6.3V :TA [A]
Q004 2SB1121
Q004 SWITCHING
T001
D001 FC806
D002 DAN222
L005 10µH
L006 100µH
L007 100µH
L008 100µH
R014 6800 0.5%
Q003 CAPSTAN VS
Q003 FP102
L011 22µH
Q002 DRUM VS
Q002 FP102
L009 10µH
L010 22µH
DT EXT POWER ON
D1 EXT UNREG
D2 EXT UNREG GND
D3 BL UNREG
D4 BL UNREG GND
D5 AU UNREG
D6 AU UNREG GND
D7 MONITOR SW UNREG
D8 MONITOR GND
D9 MONITOR ON
DA SS UNREG
DB SS GND
DC POWER ON
DS EXT ON
DD SW 5V
DE REG GND
DF VIDEO 5V
DG REG GND
DH 13V
DI -8V
DJ -20V
DK LM UNREG
DL LM GND
DM CAP ERR
DN CAP VS
DO CAP GND
DP DRUM ERR
DQ DRUM VS
DR DRUM GND

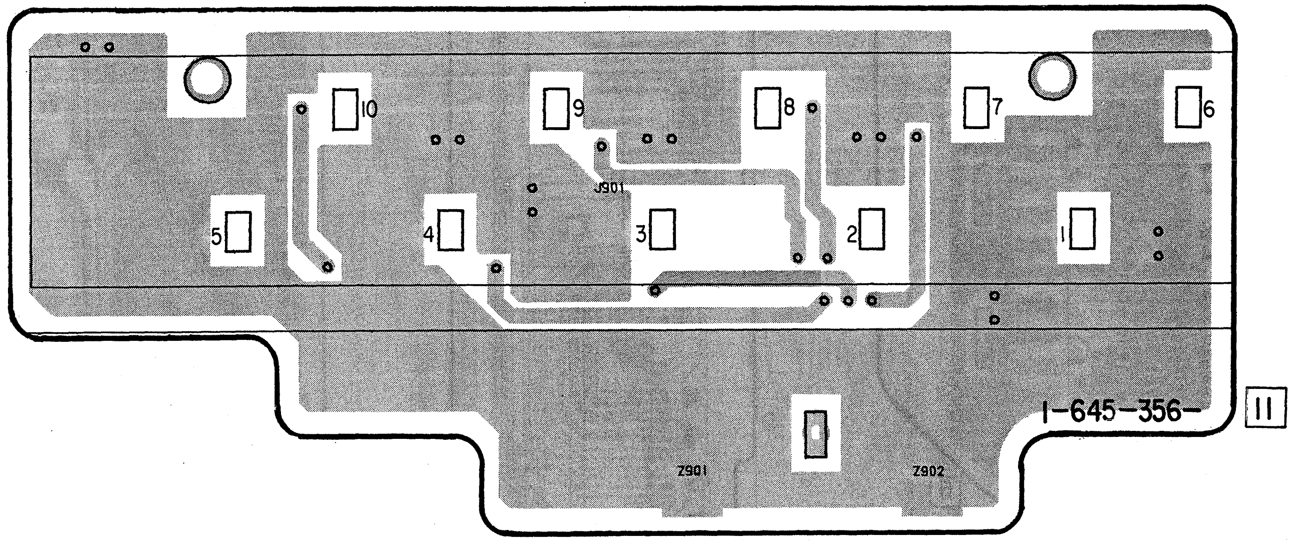
no mark : REC/PB mode
( ) : REC mode
< > : PB mode

MA-137 BOARD (3/3)
(I/F DD BLOCK)

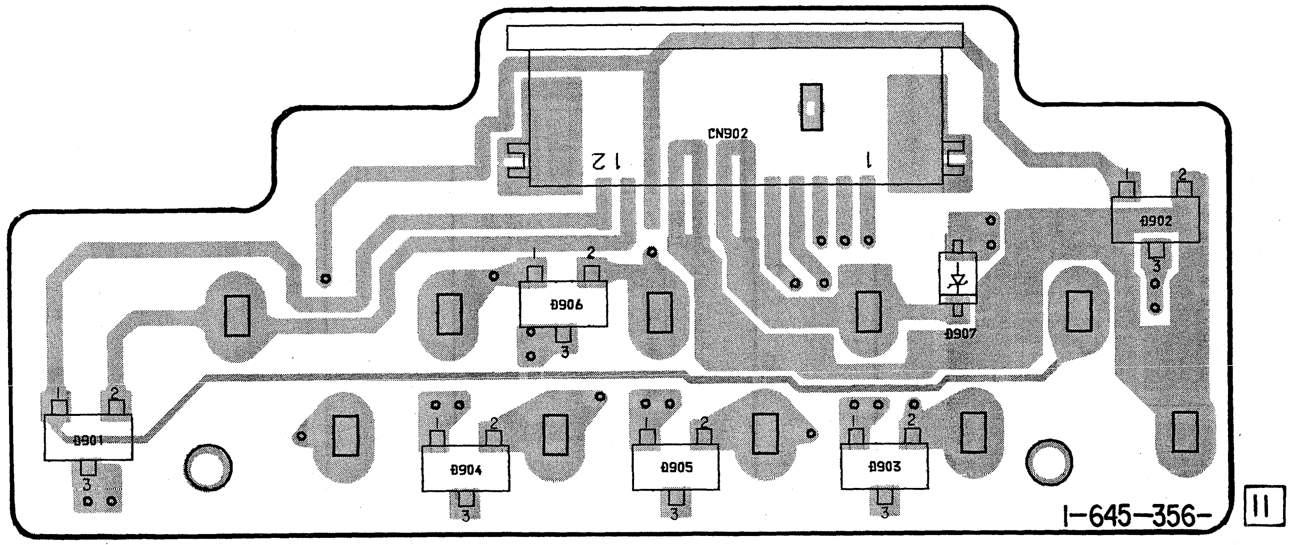
FP-621 (A/V OUTPUT JACK), HP-84 (HEADPHONE JACK), JK-86 (TUNER INPUT JACK) PRINTED WIRING BOARDS

- FP-621 board is replaced as blocks, so that there PRINTED WIRING BOARDS are omitted.

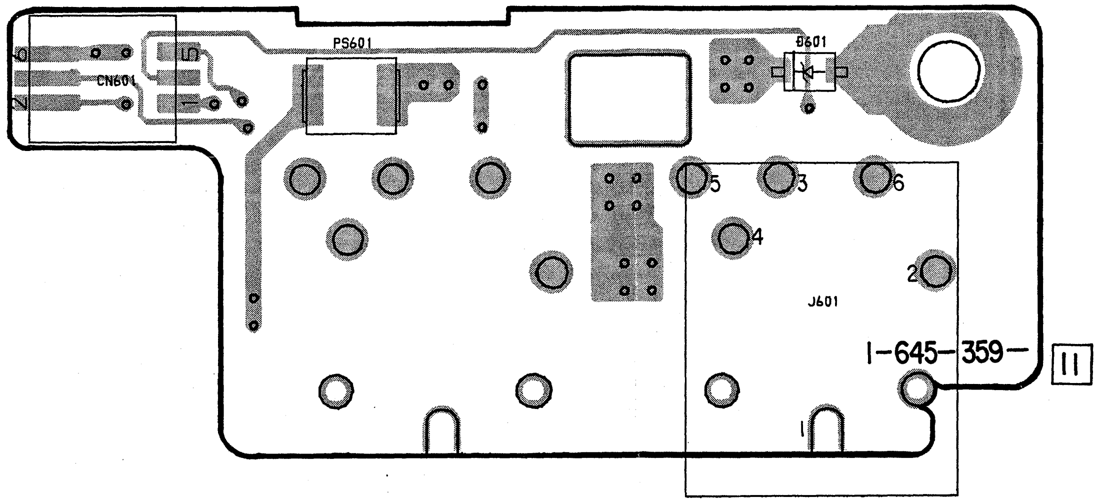
JK-86 BOARD (COMPONENT SIDE)


10
9
8
7
6
5
4
3
2
1
J901
Z901
Z902
1-645-356-
11

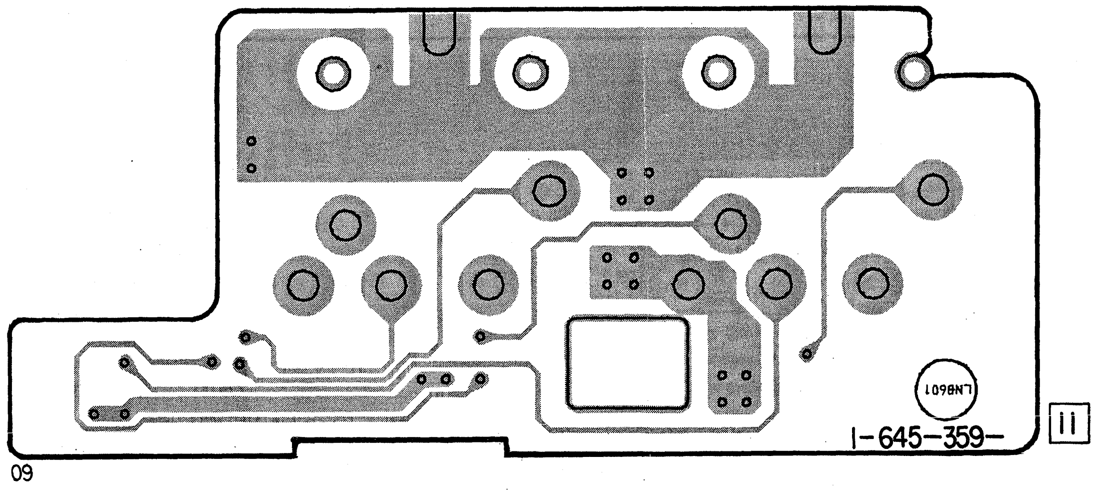
JK-86 BOARD (CONDUCTOR SIDE)


CN902
12
1
D901
D902
D903
D904
D905
D906
D907
1-645-356-
11

HP-84 BOARD (COMPONENT SIDE)


PS601
CN601
D601
J601
1
2
3
4
5
6
1-645-359-
11

HP-84 BOARD (CONDUCTOR SIDE)


CN601
1-645-359-
11
09

〈 DIODE 〉

D601	8-719-420-87	DIODE MA8130

〈 DIODE 〉

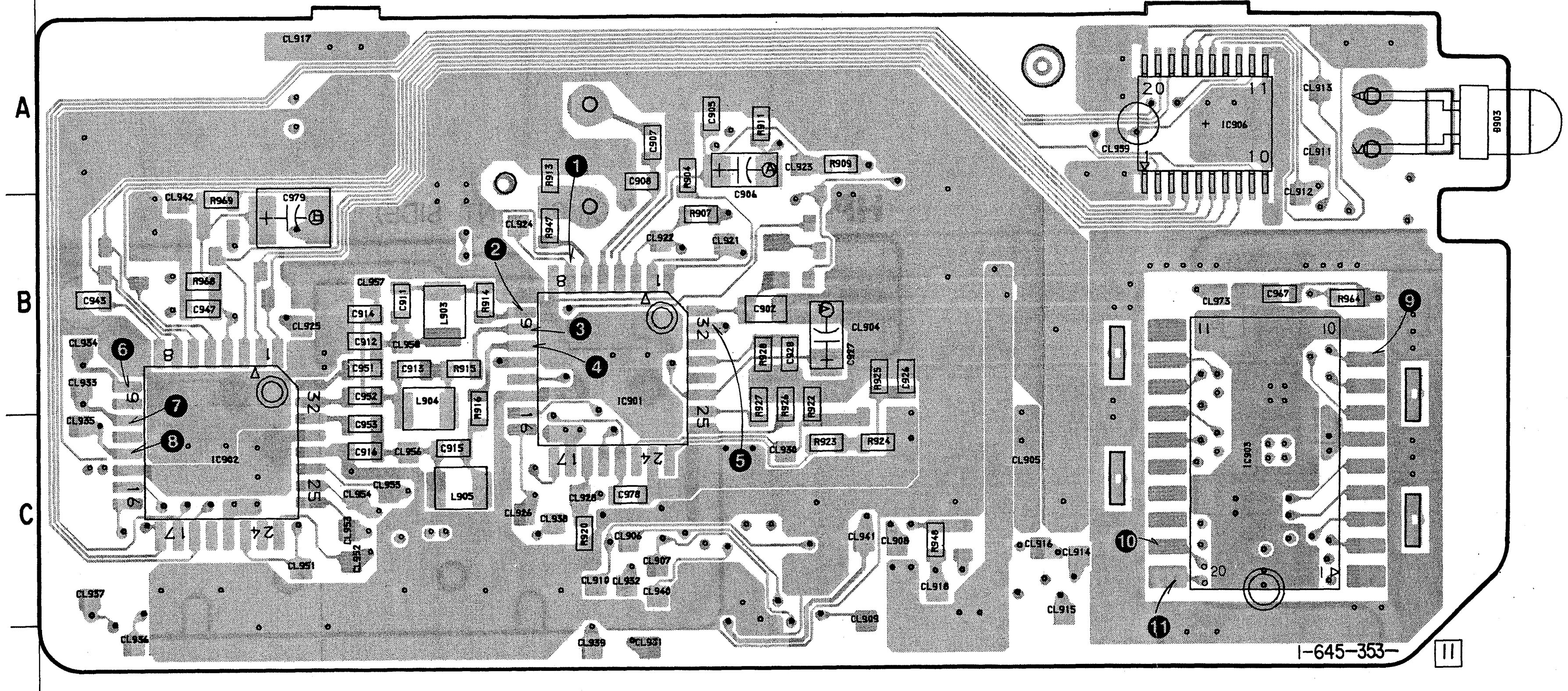
D901	8-719-420-81	DIODE MA3075WA
D902	8-719-420-81	DIODE MA3075WA
D903	8-719-420-81	DIODE MA3075WA
D904	8-719-420-81	DIODE MA3075WA
D905	8-719-420-81	DIODE MA3075WA
D906	8-719-420-81	DIODE MA3075WA
D907	8-719-420-87	DIODE MA8130

RG-25 (LCD VIDEO), VR-39 (FUNCTION SWITCH), LA-22 (BACK LIGHT RELAY), LA-23 (BACK LIGHT RELAY) PRINTED WIRING BOARDS

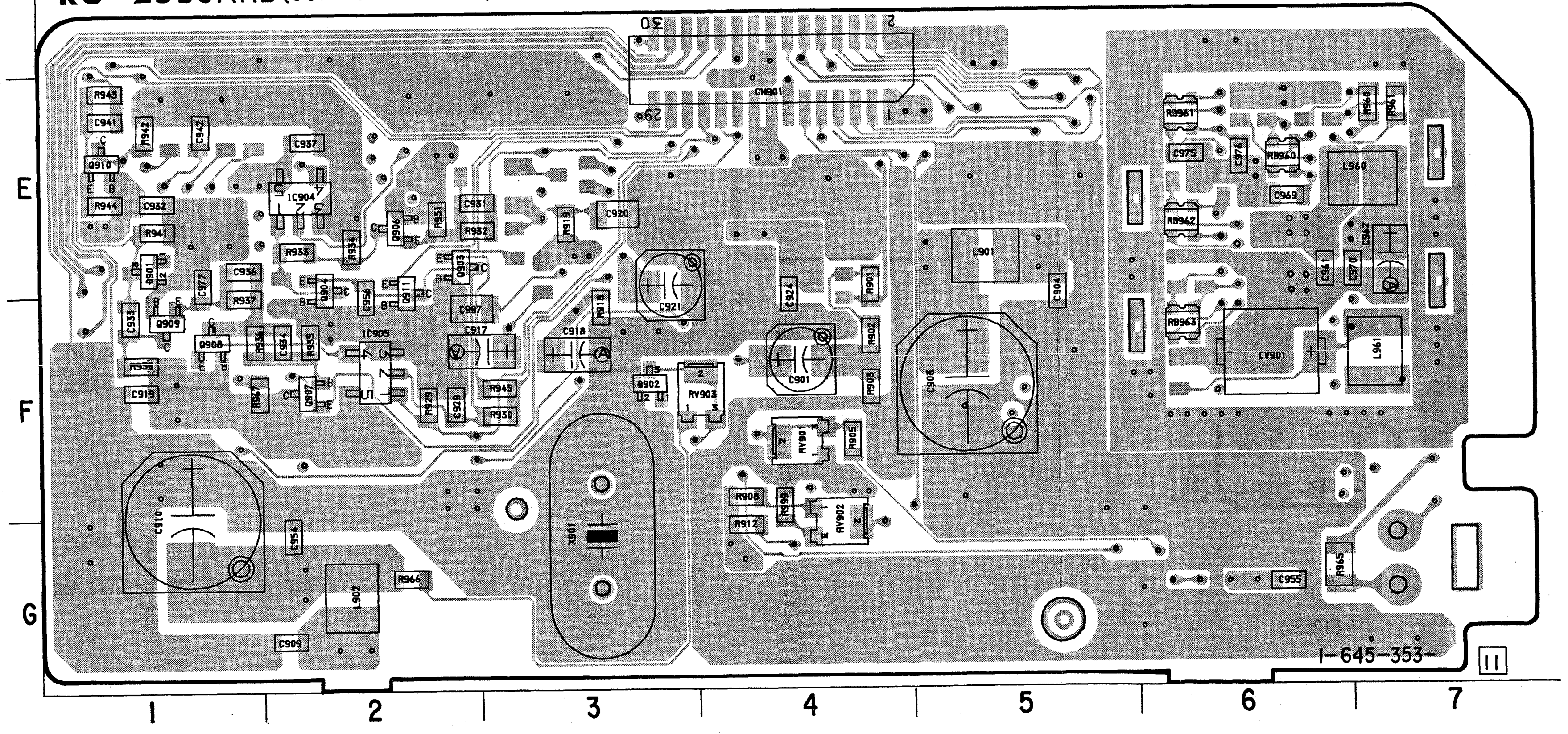
RG-25 BOARD

D901	E-1
D902	F-3
D903	A-7
IC901	B-3
IC902	C-1
IC903	C-6
IC904	E-2
IC905	F-2
IC906	A-6
Q903	E-2
Q904	E-2
Q906	E-2
Q907	F-2
Q908	F-1
Q909	F-1
Q910	E-1
Q911	E-2

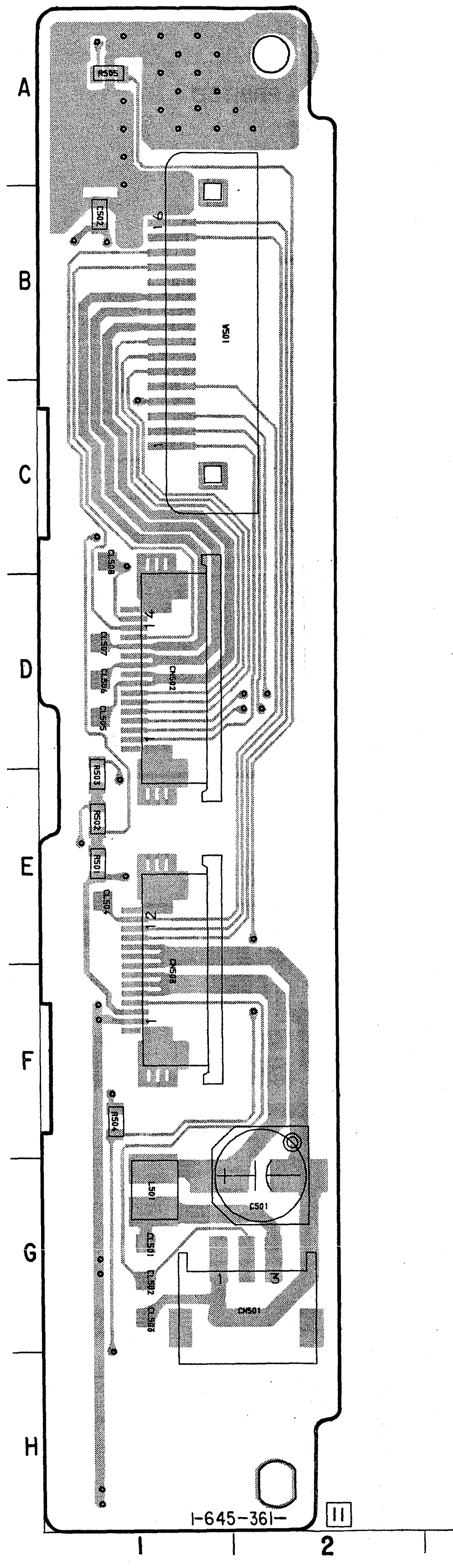
RG-25 BOARD (CONDUCTOR SIDE)


A
B
C
D
1-645-353-
11

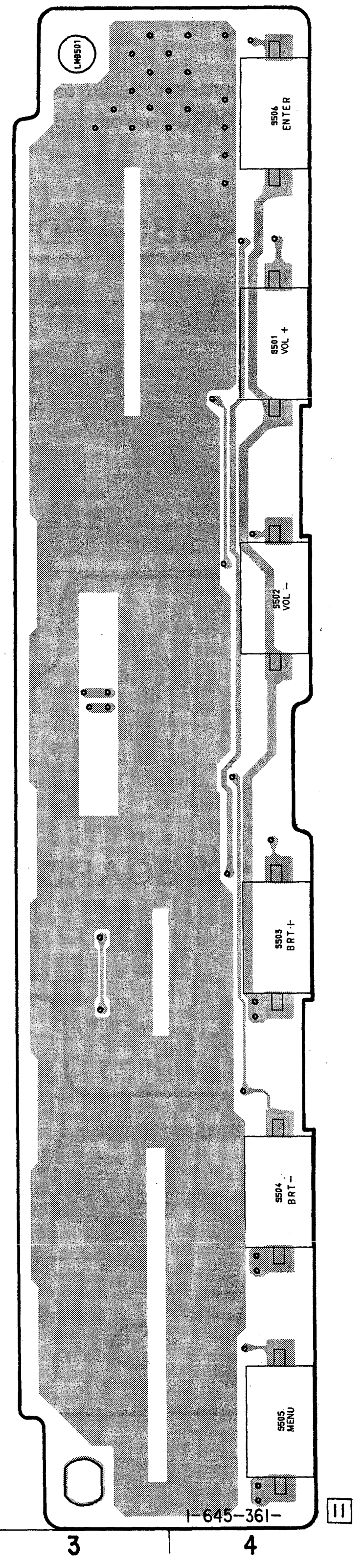
RG-25 BOARD (COMPONENT SIDE)


E
F
G
1-645-353-
11
1
2
3
4
5
6
7

VR-39 BOARD
(COMPONENT SIDE)


A
B
C
D
E
F
G
H
1-645-361-
11
1
2

VR-39 BOARD
(CONDUCTOR SIDE)


S506 ENTER
S501 VOL +
S502 VOL −
S503 BRT +
S504 BRT −
S505 MENU
1-645-361-
11
3
4

⟨ DIODE ⟩

D901	8-719-989-03	DIODE	DAN222
D902	8-719-989-03	DIODE	DAN222
D903	8-719-938-67	LED	GL-3EG8

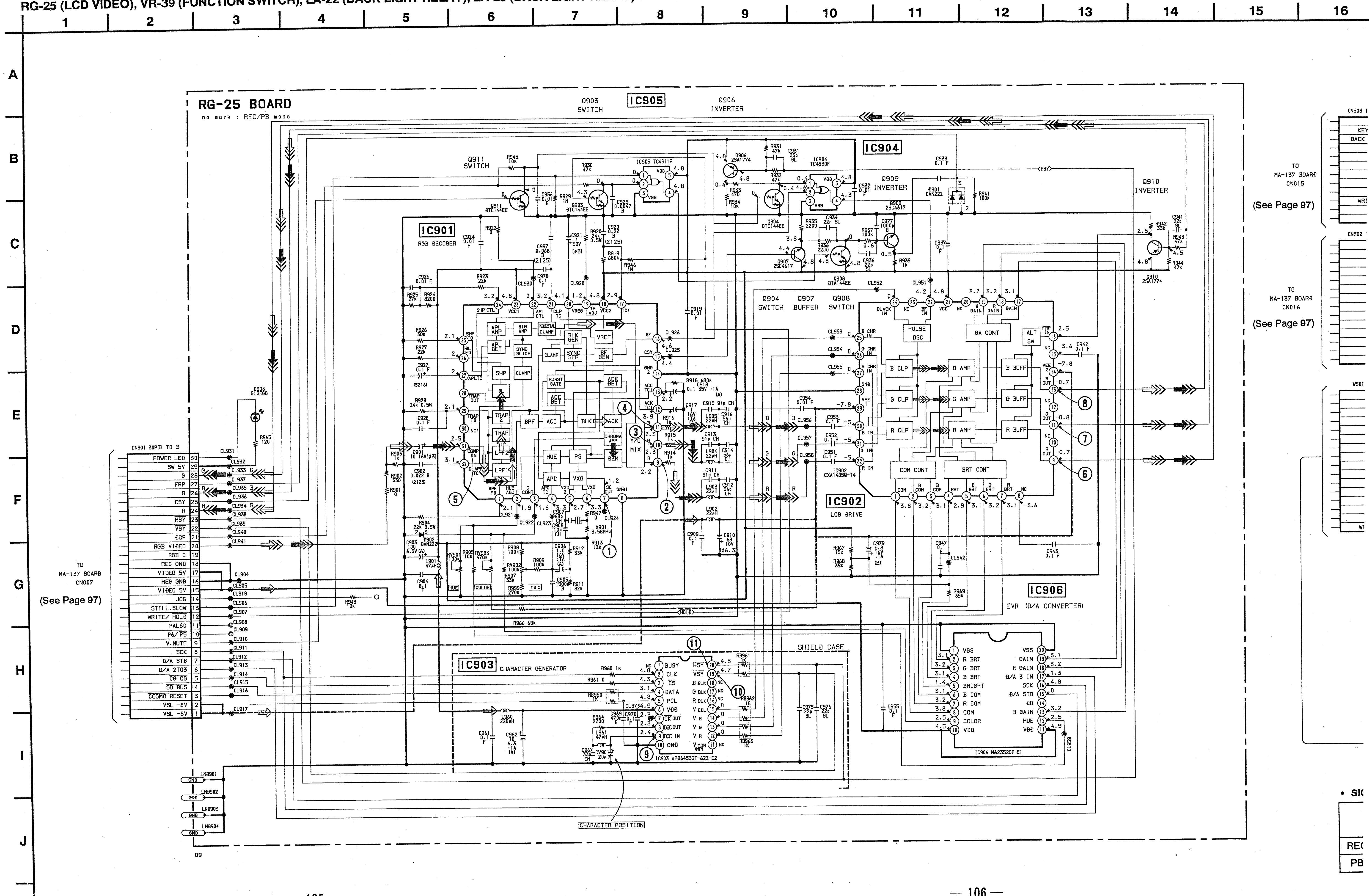
⟨ IC ⟩

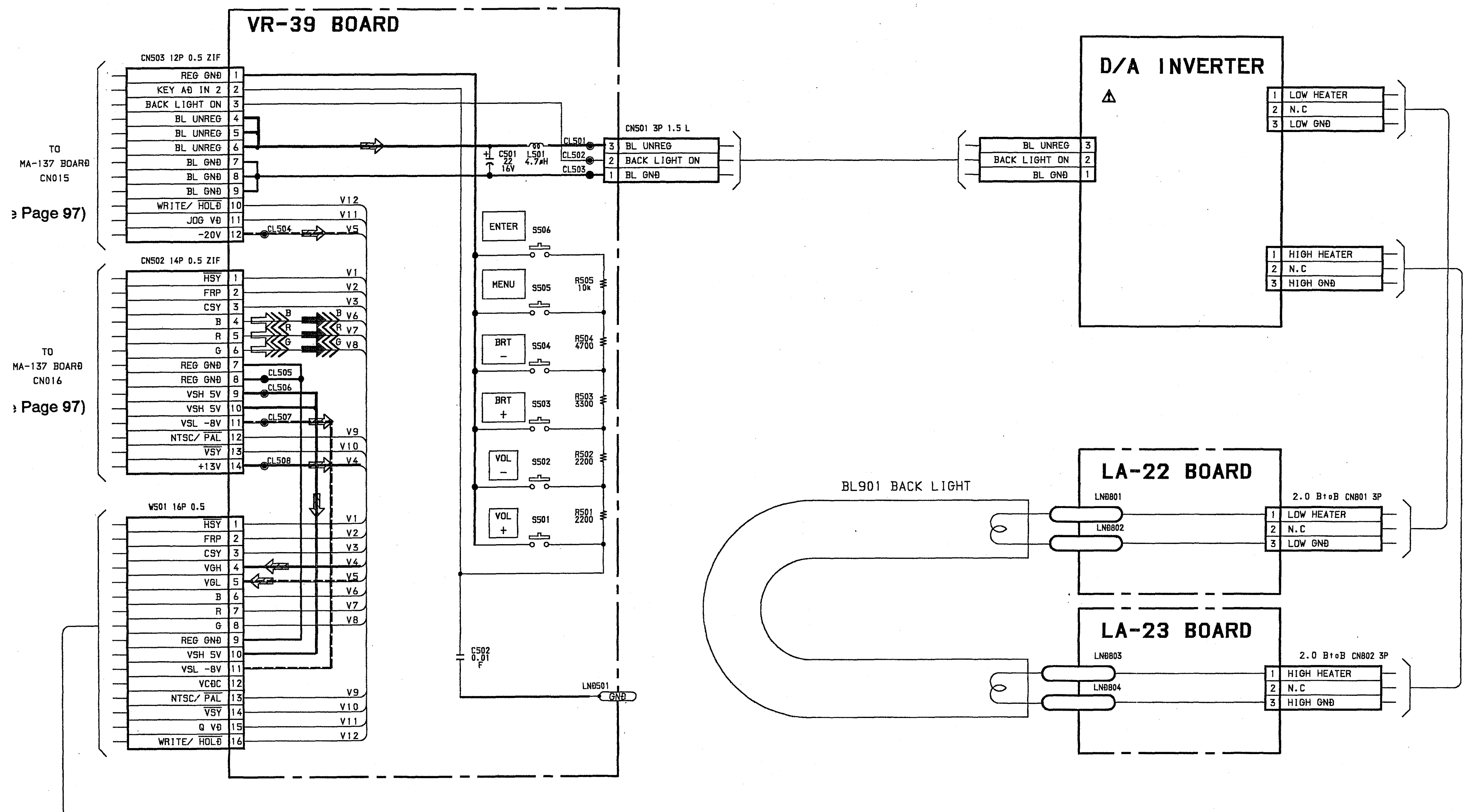
IC901	8-752-056-40	IC	CXA1385Q
IC902	8-752-057-28	IC	CXA1485Q
IC903	8-759-084-06	IC	uPD6453GT-622-E2
IC904	8-759-234-13	IC	TC4S30F
IC905	8-759-209-69	IC	TC4S11F
IC906	8-759-635-27	IC	M62352GP

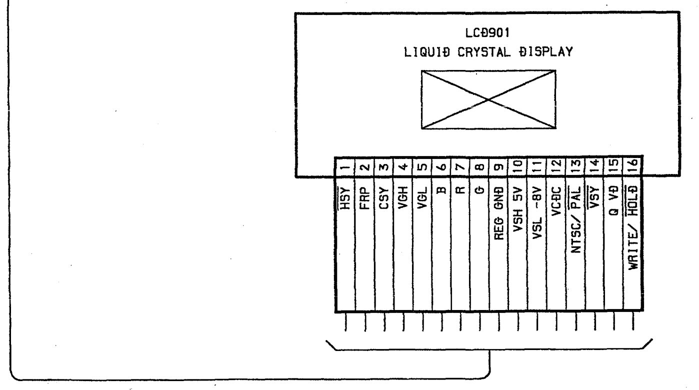
⟨ TRANSISTOR ⟩

Q903	8-729-928-81	TRANSISTOR	DTC144EE
Q904	8-729-928-81	TRANSISTOR	DTC144EE
Q906	8-729-928-19	TRANSISTOR	2SA1774R
Q907	8-729-927-XX	TRANSISTOR	2SC4617R
Q908	8-729-928-27	TRANSISTOR	DTA144EE
Q909	8-729-927-XX	TRANSISTOR	2SC4617R
Q910	8-729-928-19	TRANSISTOR	2SA1774R
Q911	8-729-928-81	TRANSISTOR	DTC144EE

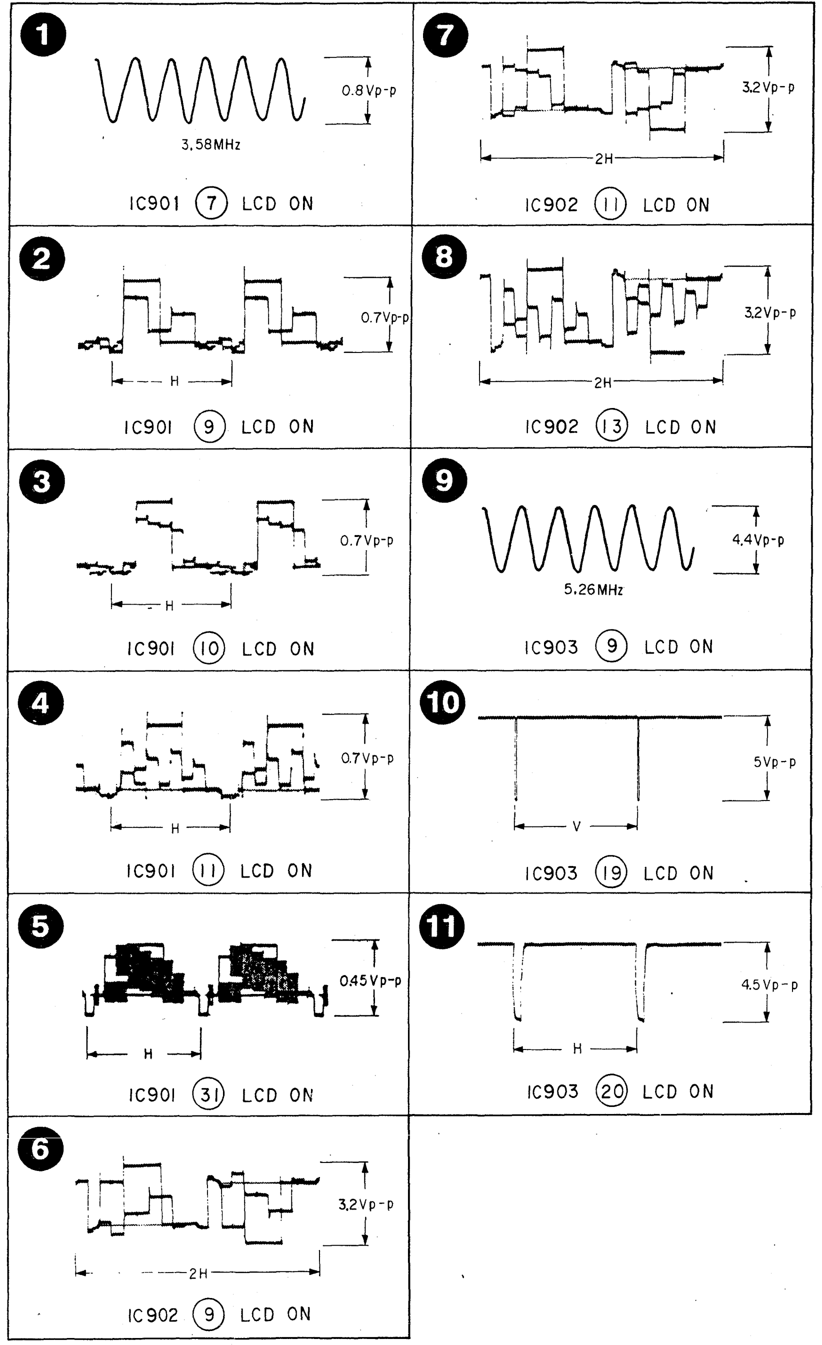
RG-25 (LCD VIDEO), VR-39 (FUNCTION SWITCH), LA-22 (BACK LIGHT RELAY), LA-23 (BACK LIGHT RELAY) SCHEMATIC DIAGRAMS


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
RG-25 BOARD
no mark : REC/PB mode
Q903 SWITCH
IC905
Q906 INVERTER
IC904
Q911 SWITCH
IC905 TC4S11F
IC904 TC4S30F
Q909 INVERTER
Q910 INVERTER
IC901
RGB DECODER
Q904 SWITCH
Q907 BUFFER
Q908 SWITCH
IC902
LCD DRIVE
IC902 CXA1485Q-T4
IC906
EVR (D/A CONVERTER)
IC906 M62352OP-E1
IC903
CHARACTER GENERATOR
IC903 μPD6453OT-622-E2
SHIELD CASE
CHARACTER POSITION
CN901 30P B TO B
POWER LED
SW 5V
G
FRP
B
CSY
R
HSY
VSY
DDP
RGB VIDEO
RGB C
REG GND
VIDEO 5V
REG GND
VIDEO 5V
JOG
STILL.SLOW
WRITE/ HOLD
PAL60
P6/ P5
V.MUTE
SCK
D/A STB
D/A 2TO3
CG CS
SO BUS
COSMO RESET
VSL -8V
VSL -8V
TO MA-137 BOARD CN007
(See Page 97)
TO MA-137 BOARD CN015
(See Page 97)
TO MA-137 BOARD CN016
(See Page 97)
CN503
CN502
W501
KEY
BACK
LND901
LND902
LND903
LND904
GND
D903 GL3ED8
X901 3.58MHz
HUE
COLOR
fsc
B CLP
G CLP
R CLP
B AMP
G AMP
R AMP
B BUFF
G BUFF
R BUFF
GA CONT
PULSE OSC
ALT SW
COM CONT
BRT CONT
SHP
CLAMP
APL AMP
SIG AMP
APL DET
SYNC SLICE
BLK GEN
VREF
SYNC SEP
BF GEN
BURST GATE
ACC DET
ACK DET
TRAP
BPF
ACC
BLK
ACK
LPF
HUE
PS
APC
VXO
CHROMA AMP
DEM
Y/C MIX
VSS
R BRT
G BRT
B BRT
BRIGHT
B COM
R COM
COM
COLOR
VDD
GAIN
R GAIN
D/A 3 IN
SCK
D/A STB
SD
B GAIN
HUE
BUSY
CLK
CS
DATA
PCL
VDD
CK OUT
OSC OUT
OSC IN
GND
HSY
VSY
B BLK
G BLK
R BLK
V CBL
V B
V G
V R
V MON
(HSY)
(HOLD)
09
• SI
REC
PB

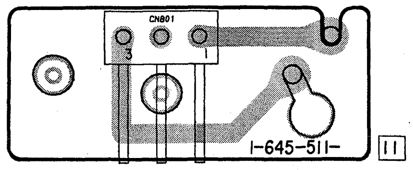

VR-39 BOARD
CN503 12P 0.5 ZIF
REG GND 1
KEY AD IN 2 2
BACK LIGHT ON 3
BL UNREG 4
BL UNREG 5
BL UNREG 6
BL GND 7
BL GND 8
BL GND 9
WRITE/ HOLD 10
JOG VD 11
-20V 12
TO MA-137 BOARD CN015
Page 97)
CN502 14P 0.5 ZIF
HSY 1
FRP 2
CSY 3
B 4
R 5
G 6
REG GND 7
REG GND 8
VSH 5V 9
VSH 5V 10
VSL -8V 11
NTSC/ PAL 12
VSY 13
+13V 14
TO MA-137 BOARD CN016
Page 97)
W501 16P 0.5
HSY 1
FRP 2
CSY 3
VGH 4
VGL 5
B 6
R 7
G 8
REG GND 9
VSH 5V 10
VSL -8V 11
VCDC 12
NTSC/ PAL 13
VSY 14
Q VD 15
WRITE/ HOLD 16
V1 V2 V3 V4 V5 V6 V7 V8 V9 V10 V11 V12
CL501 CL502 CL503 CL504 CL505 CL506 CL507 CL508
C501 22 16V
L501 4.7μH
ENTER S506
MENU S505 R505 10k
BRT − S504 R504 4700
BRT + S503 R503 3300
VOL − S502 R502 2200
VOL + S501 R501 2200
C502 0.01 F
LND501 GND
CN501 3P 1.5 L
3 BL UNREG
2 BACK LIGHT ON
1 BL GND
D/A INVERTER
⚠
BL UNREG 3
BACK LIGHT ON 2
BL GND 1
1 LOW HEATER
2 N.C
3 LOW GND
1 HIGH HEATER
2 N.C
3 HIGH GND
BL901 BACK LIGHT
LA-22 BOARD
LND801
LND802
2.0 BtoB CN801 3P
1 LOW HEATER
2 N.C
3 LOW GND
LA-23 BOARD
LND803
LND804
2.0 BtoB CN802 3P
1 HIGH HEATER
2 N.C
3 HIGH GND


LCD901
LIQUID CRYSTAL DISPLAY
1 HSY
2 FRP
3 CSY
4 VGH
5 VGL
6 B
7 R
8 G
9 REG GND
10 VSH 5V
11 VSL -8V
12 VCDC
13 NTSC/ PAL
14 VSY
15 Q VD
16 WRITE/ HOLD

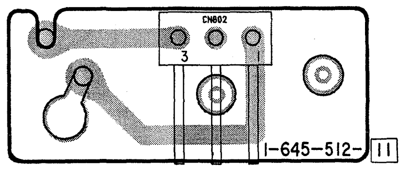
RG-25 BOARD



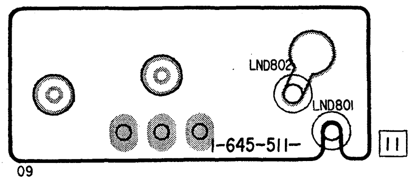
LA-22 BOARD
(COMPONENT SIDE)


CN801
3
1
1-645-511-
11

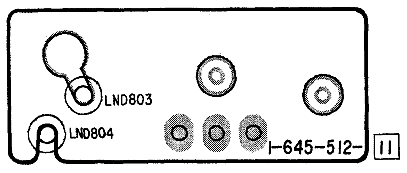
LA-23 BOARD
(COMPONENT SIDE)


CN802
3
1-645-512-
11

LA-22 BOARD
(CONDUCTOR SIDE)


LND802
LND801
1-645-511-
11
09

LA-23 BOARD
(CONDUCTOR SIDE)


LND803
LND804
1-645-512-
11

- **SIGNAL PATH**

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	➡	➡	
PB	⇨	⇨	⇨	

AU-136 (AUDIO) PRINTED WIRING BOARD

⟨ DIODE ⟩

D054	8-719-989-03	DIODE DAN222
D055	8-719-989-03	DIODE DAN222
D401	8-719-989-03	DIODE DAN222
D402	8-719-989-00	DIODE DA221
D403	8-719-420-81	DIODE MA3075WA
D404	8-719-420-81	DIODE MA3075WA
D405	8-719-420-81	DIODE MA3075WA

⟨ IC ⟩

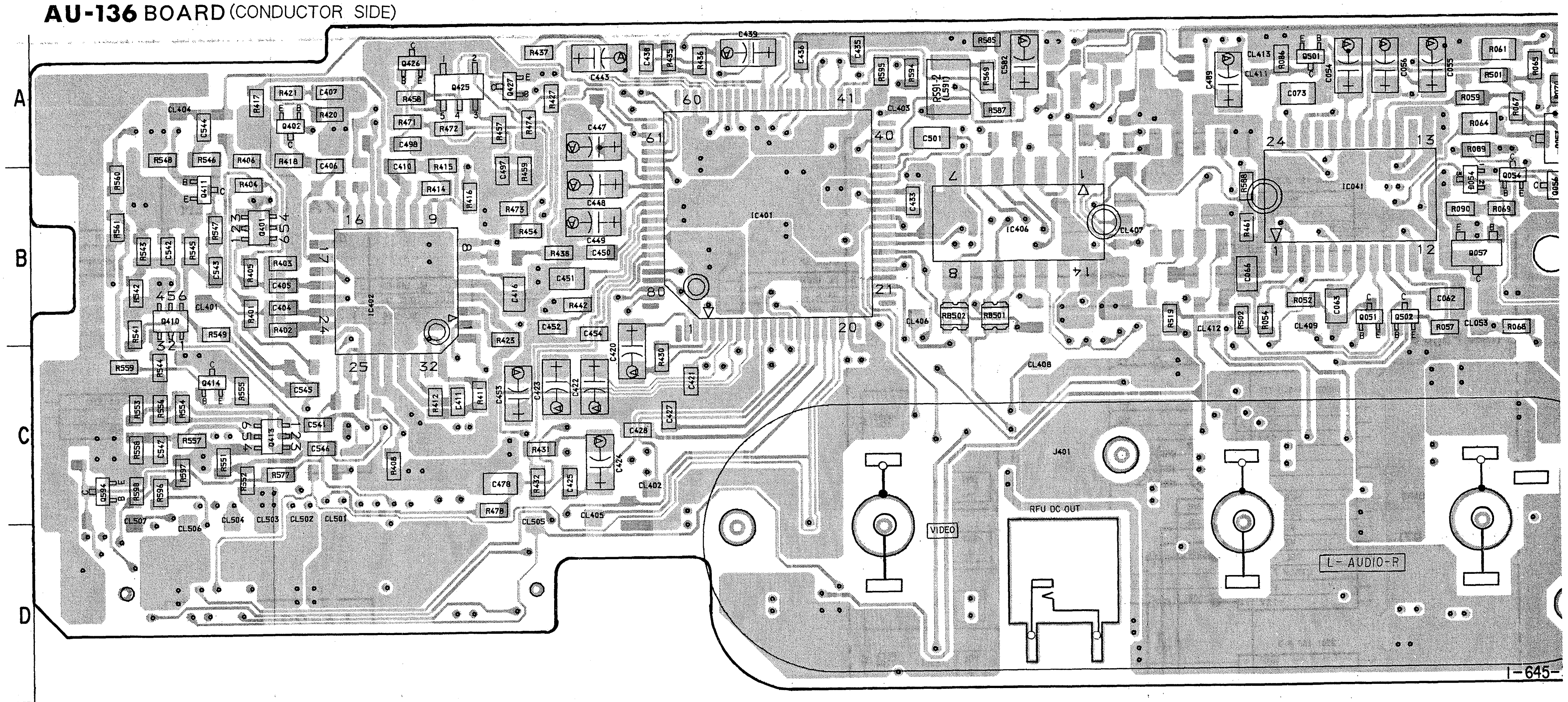
IC041	8-759-510-56	IC BA3570FS
IC042	8-759-701-02	IC NJM2073M
IC043	8-759-234-77	IC TC4S66F
IC401	8-759-077-12	IC CXA1542R
IC402	8-752-334-42	IC CXD2106Q
IC403	8-752-053-21	IC CXA1211M
IC404	8-759-108-09	IC uPD4012BG
IC406	8-759-108-09	IC uPD4012BG

⟨ TRANSISTOR ⟩

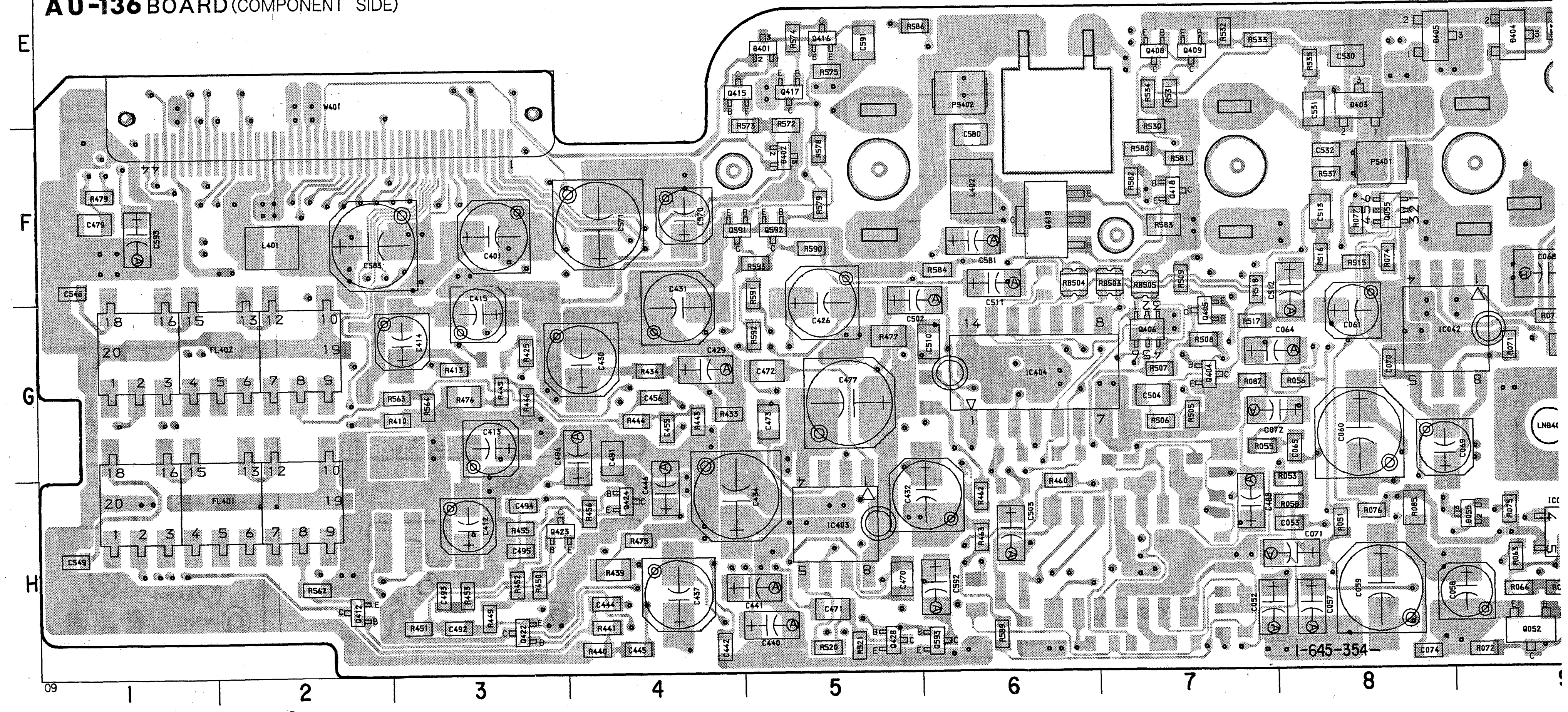
Q051	8-729-928-81	TRANSISTOR DTC144EE
Q052	8-729-202-38	TRANSISTOR 2SC3326N-A
Q053	8-729-202-38	TRANSISTOR 2SC3326N-A
Q054	8-729-928-87	TRANSISTOR DTC124EE
Q055	8-729-927-62	TRANSISTOR UMX1
Q056	8-729-928-81	TRANSISTOR DTC144EE
Q057	8-729-141-48	TRANSISTOR 2SB624-BV345
Q401	8-729-927-62	TRANSISTOR UMX1
Q402	8-729-927-XX	TRANSISTOR 2SC4617R
Q404	8-729-927-XX	TRANSISTOR 2SC4617R
Q405	8-729-927-XX	TRANSISTOR 2SC4617R
Q406	8-729-930-13	TRANSISTOR UMH2
Q408	8-729-927-XX	TRANSISTOR 2SC4617R
Q409	8-729-927-XX	TRANSISTOR 2SC4617R
Q410	8-729-927-62	TRANSISTOR UMX1
Q411	8-729-927-XX	TRANSISTOR 2SC4617R
Q412	8-729-928-81	TRANSISTOR DTC144EE
Q413	8-729-927-62	TRANSISTOR UMX1
Q414	8-729-927-XX	TRANSISTOR 2SC4617R
Q415	8-729-928-19	TRANSISTOR 2SA1774R
Q416	8-729-928-81	TRANSISTOR DTC144EE
Q417	8-729-928-19	TRANSISTOR 2SA1774R
Q418	8-729-927-XX	TRANSISTOR 2SC4617R
Q419	8-729-141-48	TRANSISTOR 2SB624-BV345
Q422	8-729-928-19	TRANSISTOR 2SA1774R
Q423	8-729-927-XX	TRANSISTOR 2SC4617R
Q424	8-729-927-XX	TRANSISTOR 2SC4617R
Q425	8-729-903-10	TRANSISTOR FMW1
Q426	8-729-927-XX	TRANSISTOR 2SC4617R
Q427	8-729-928-19	TRANSISTOR 2SA1774R
Q428	8-729-928-81	TRANSISTOR DTC144EE
Q501	8-729-927-XX	TRANSISTOR 2SC4617R
Q502	8-729-927-XX	TRANSISTOR 2SC4617R
Q591	8-729-927-XX	TRANSISTOR 2SC4617R
Q592	8-729-927-XX	TRANSISTOR 2SC4617R
Q593	8-729-928-90	TRANSISTOR DTC114EE
Q594	8-729-928-81	TRANSISTOR DTC144EE

AU-136 BOARD	
D054	B-9
D055	H-9
D401	E-5
D402	F-5
D403	E-8
D404	E-9
D405	E-8
IC041	B-8
IC042	G-8
IC043	H-9
IC401	B-5
IC402	B-2
IC403	H-5
IC404	G-6
IC406	B-6
Q051	B-8
Q052	H-9
Q053	A-9
Q054	B-9
Q055	F-8
Q056	B-9
Q057	B-9
Q401	B-2
Q402	A-2
Q404	G-7
Q405	G-7
Q406	G-7
Q408	E-7
Q409	E-7
Q410	B-1
Q411	B-1
Q412	H-2
Q413	C-2
Q414	C-1
Q415	E-5
Q416	E-5
Q417	E-5
Q418	F-7
Q419	F-6
Q422	H-3
Q423	H-3
Q424	H-4
Q425	A-3
Q426	A-3
Q427	A-3
Q428	H-5
Q501	A-8
Q502	B-8
Q591	F-4
Q592	F-5
Q593	H-6
Q594	C-1

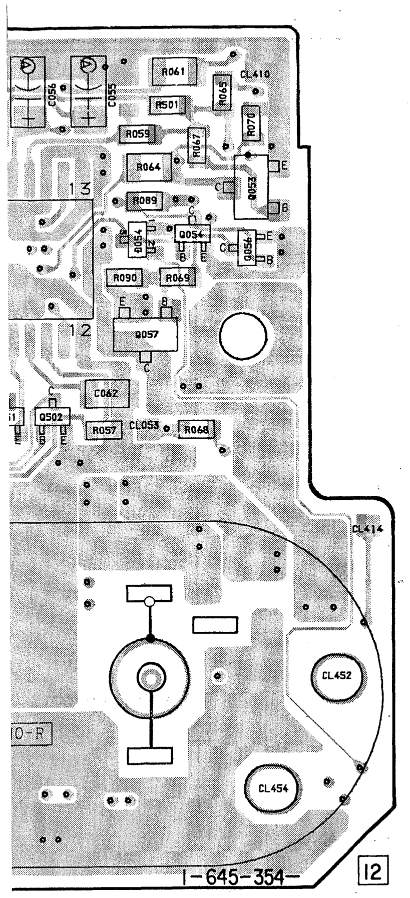
AU-136 BOARD (CONDUCTOR SIDE)

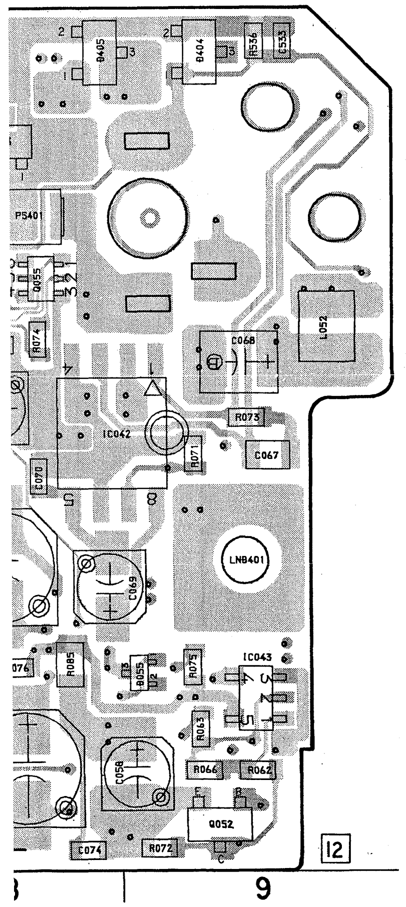


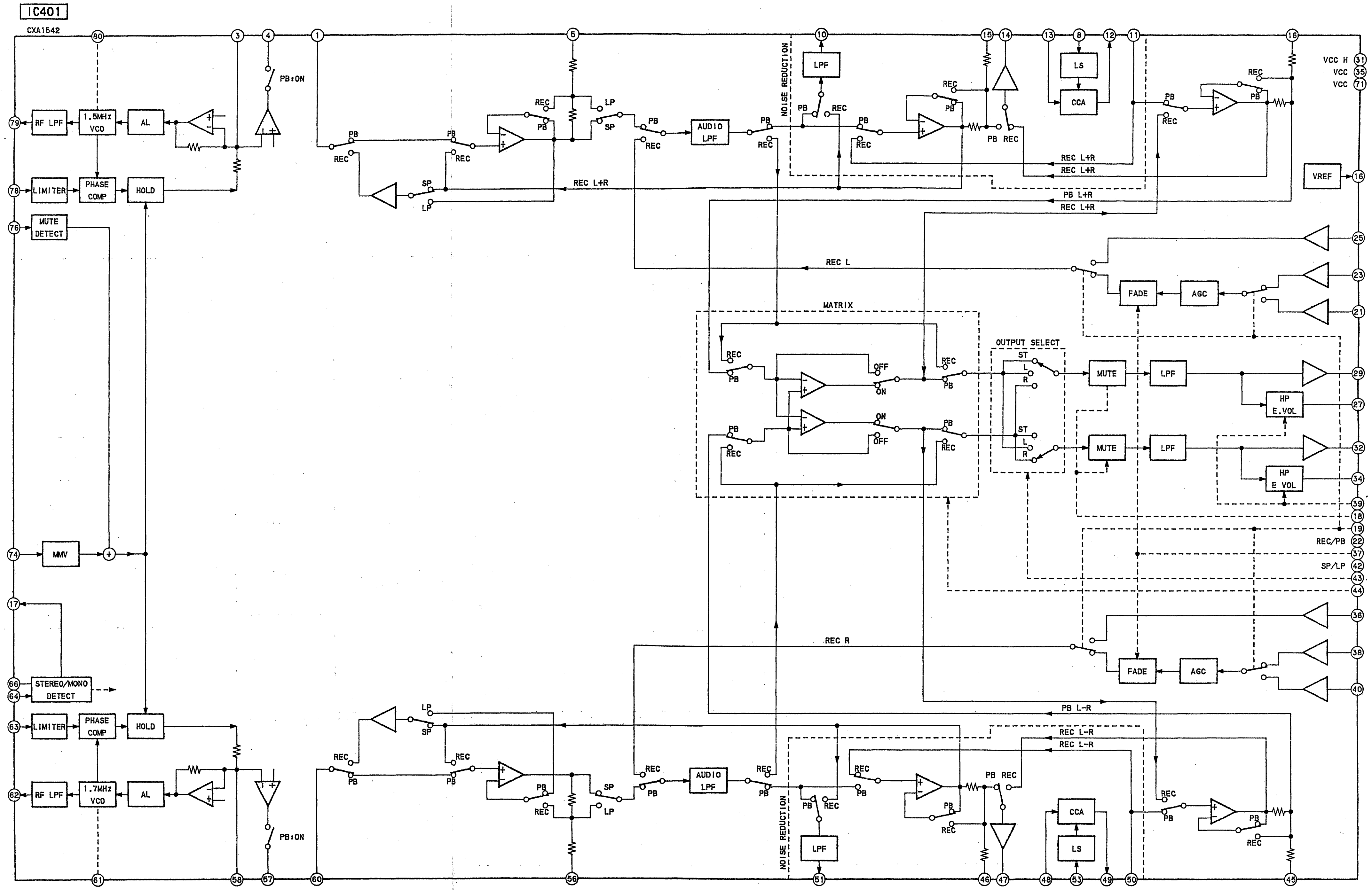
AU-136 BOARD (COMPONENT SIDE)



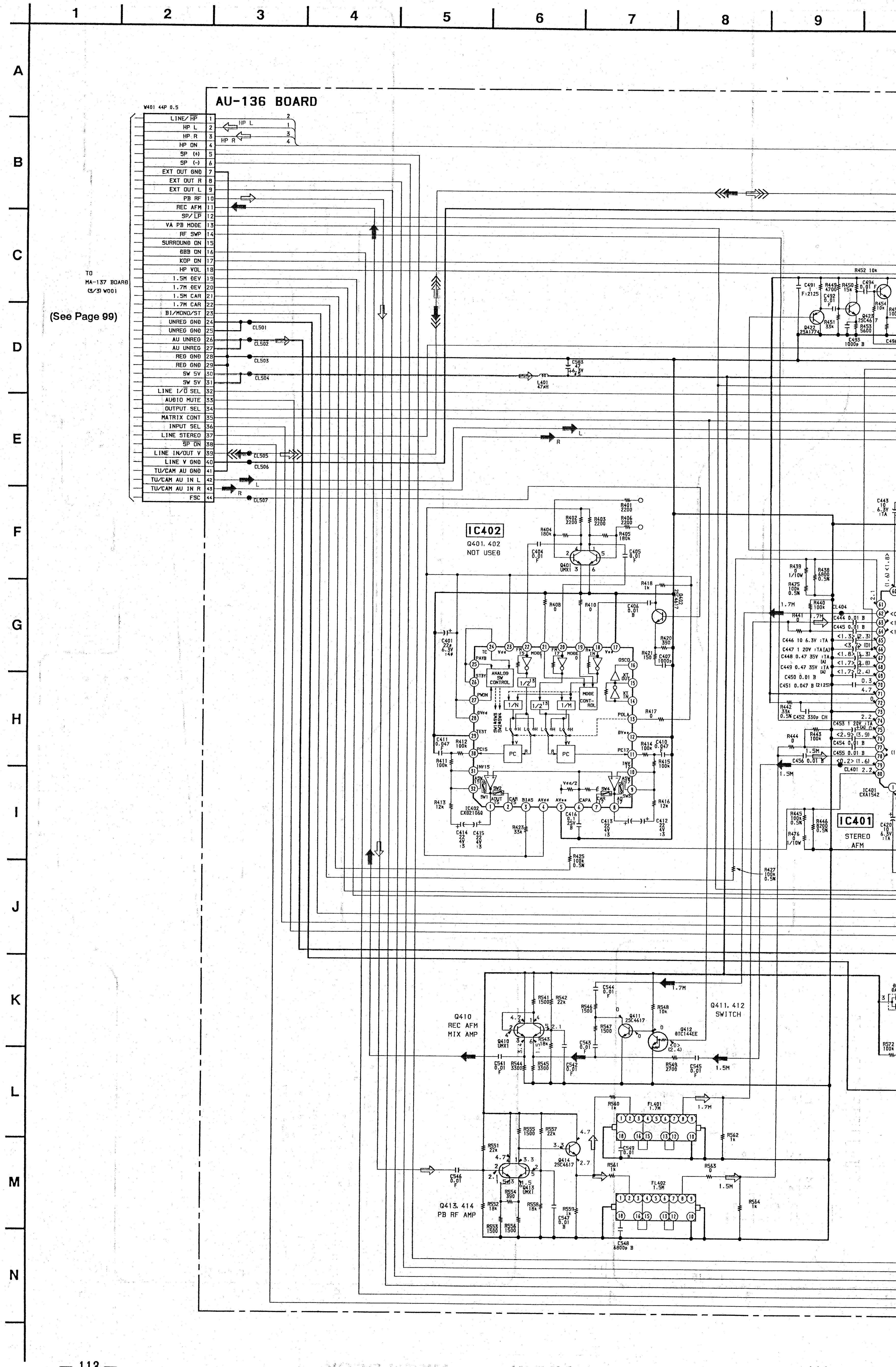
AUDIO AUDIO

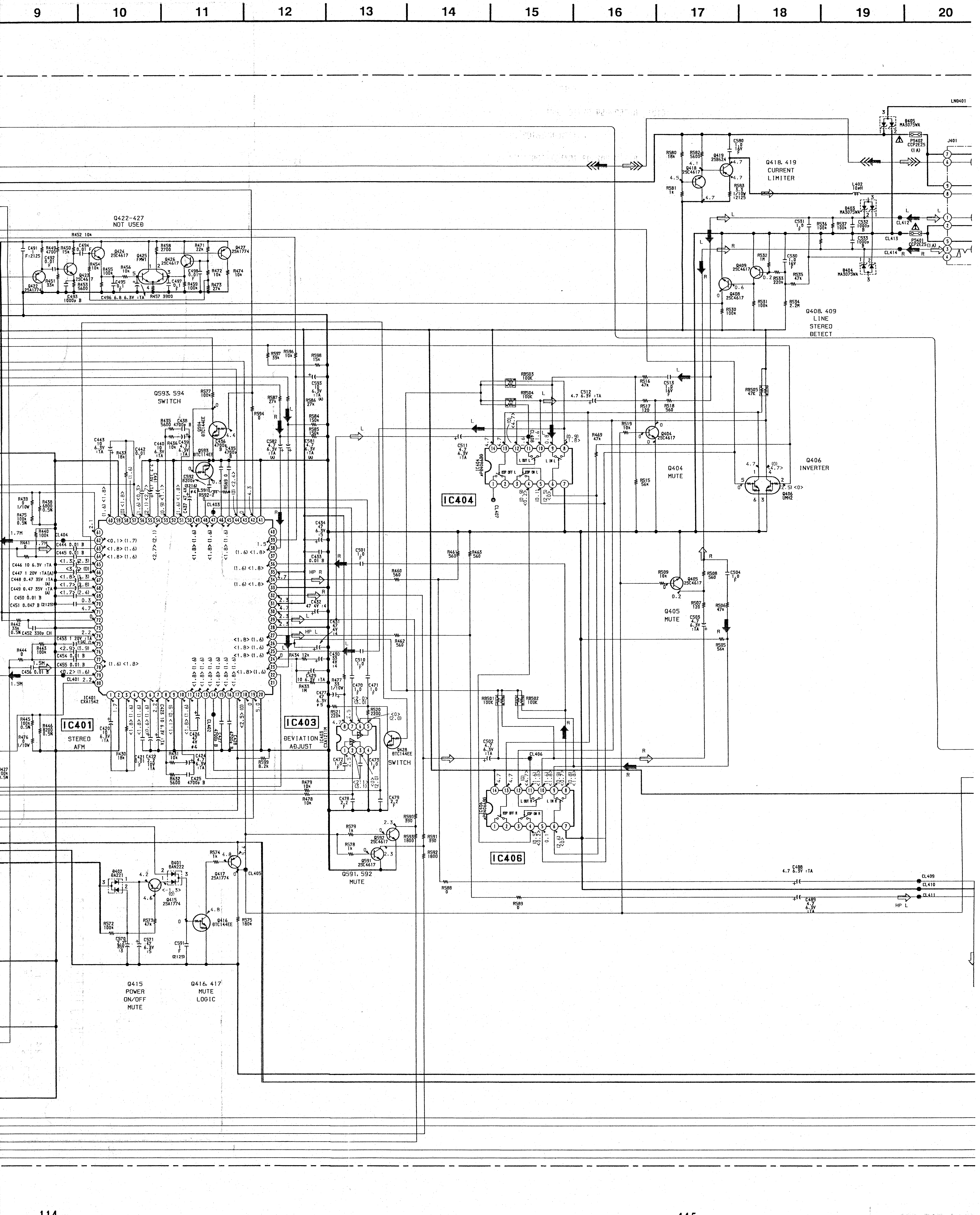

R061
CL410
R501
R065
R070
R059
R067
R064
Q053
R089
Q054
R090
R069
Q057
C062
Q502
R057
CL053
R068
CL414
CL452
CL454
1-645-354-
12

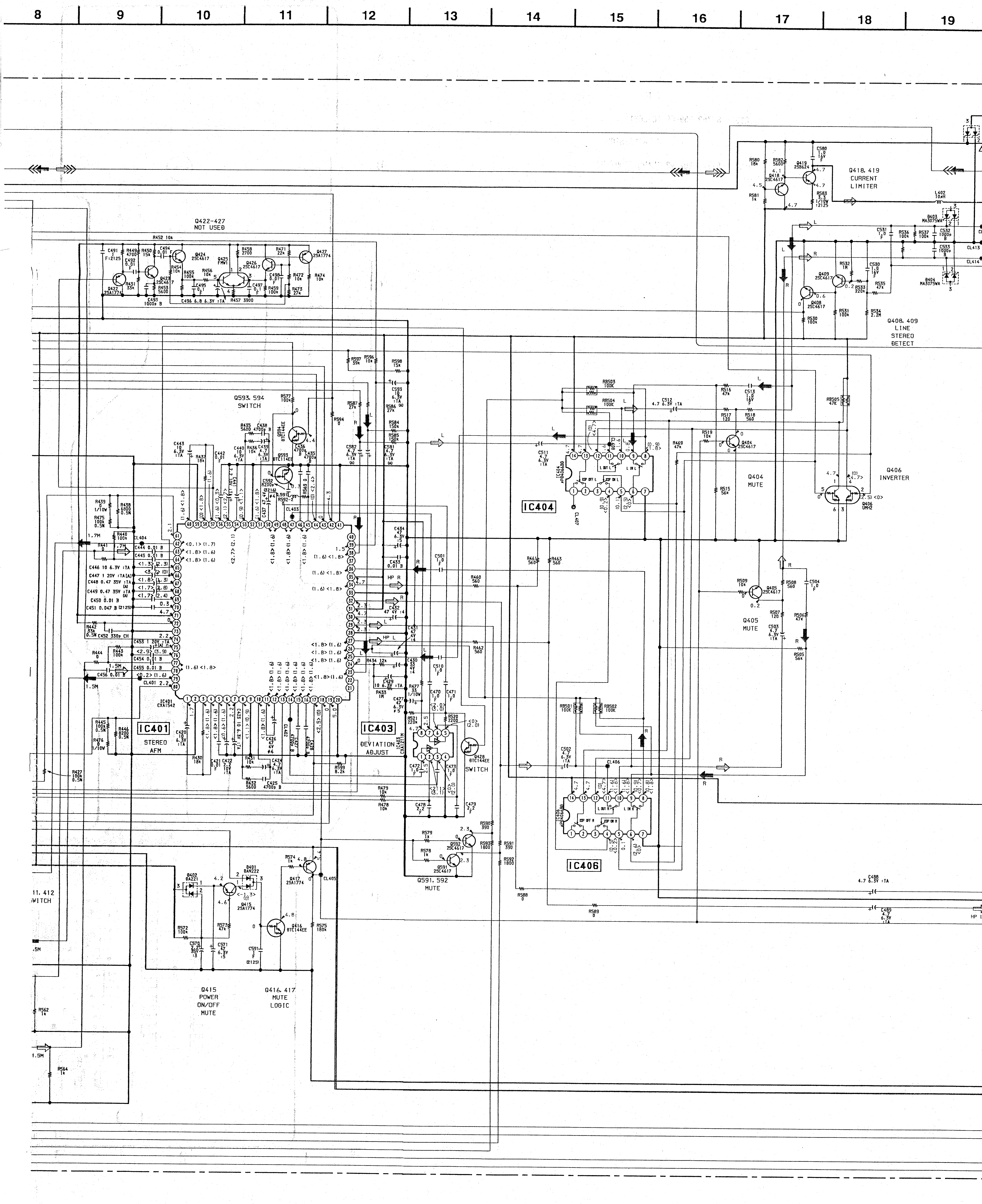

Q405
Q404
R536
R535
PS401
Q055
R074
C068
L052
IC042
R073
R071
C067
C070
LNB401
C069
R085
IC043
R043
C058
R066
R062
Q052
C074
R072
12
9

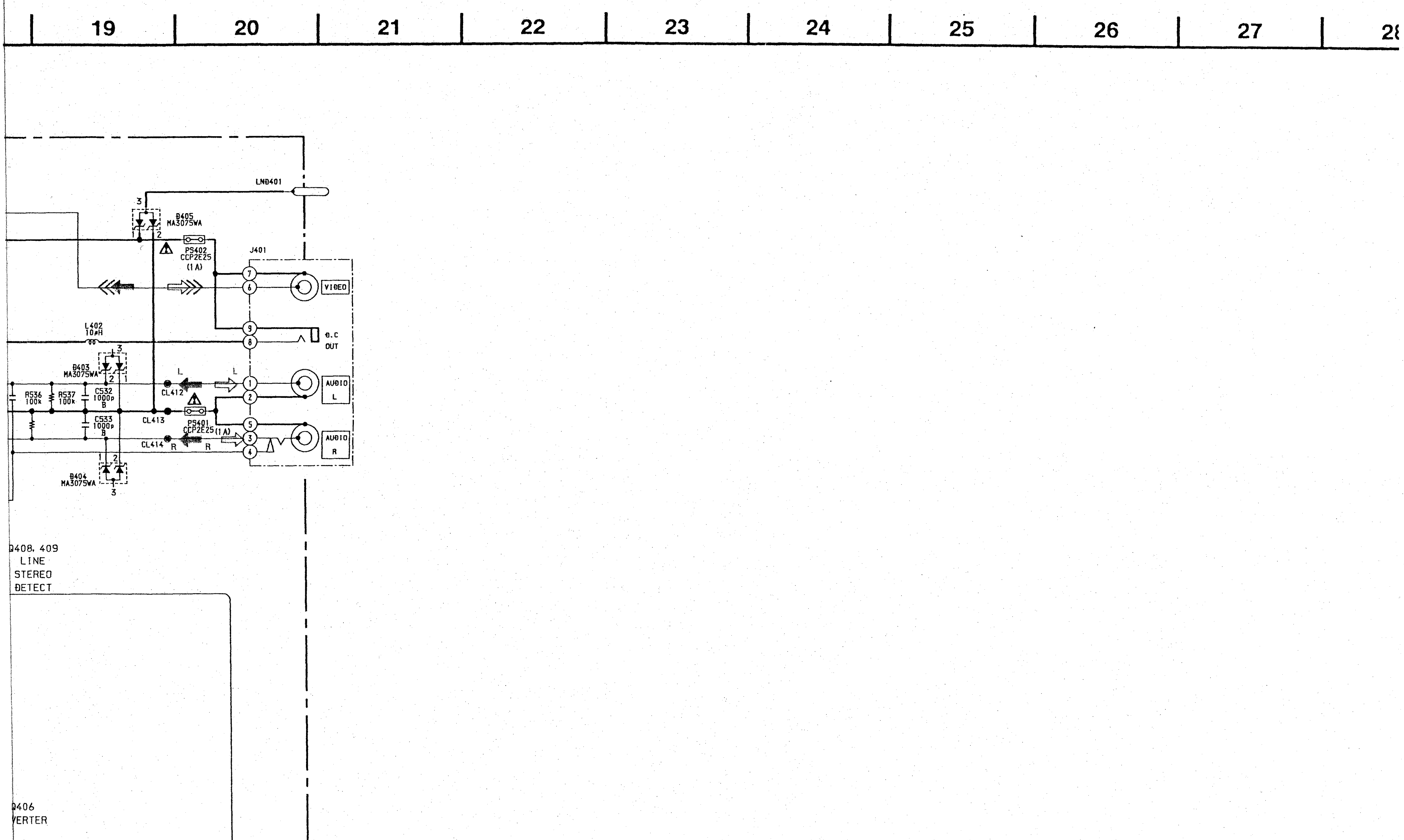

IC401
CXA1542
RF LPF
1.5MHz VCO
AL
LIMITER
PHASE COMP
HOLD
MUTE DETECT
MMV
STEREO/MONO DETECT
1.7MHz VCO
PB:ON
REC
PB
SP
LP
AUDIO LPF
NOISE REDUCTION
LPF
LS
CCA
REC L+R
PB L+R
REC L
REC R
PB L-R
REC L-R
VREF
VCC H
VCC
FADE
AGC
MATRIX
OFF
ON
OUTPUT SELECT
ST
L
R
MUTE
HP E.VOL
REC/PB
SP/LP

AU-136 (AUDIO) SCHEMATIC DIAGRAM


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
G
H
I
J
K
L
M
N
AU-136 BOARD
W401 44P 0.5
LINE/HP 1
HP L 2
HP R 3
HP ON 4
SP (+) 5
SP (-) 6
EXT OUT GND 7
EXT OUT R 8
EXT OUT L 9
PB RF 10
REC AFM 11
SP/LP 12
VA PB MODE 13
RF SWP 14
SURROUND ON 15
BBB ON 16
KDP ON 17
HP VOL 18
1.5M DEV 19
1.7M DEV 20
1.5M CAR 21
1.7M CAR 22
BI/MONO/ST 23
UNREG GND 24
UNREG GND 25
AU UNREG 26
AU UNREG 27
REG GND 28
REG GND 29
SW 5V 30
SW 5V 31
LINE I/O SEL 32
AUDIO MUTE 33
OUTPUT SEL 34
MATRIX CONT 35
INPUT SEL 36
LINE STEREO 37
SP ON 38
LINE IN/OUT V 39
LINE V GND 40
TU/CAM AU GND 41
TU/CAM AU IN L 42
TU/CAM AU IN R 43
FSC 44
TO
MA-137 BOARD
(3/3) W001
(See Page 99)
HP L
HP R
CL501
CL502
CL503
CL504
CL505
CL506
CL507
L
R
C583 47 6.3V
L401 47μH
IC402
Q401, 402
NOT USED
R401 2200
R402 2200
R403 2200
R404 180k
R405 180k
R406 2200
C404 0.01 F
C405 0.01 F
Q401 UMX1
R418 1k
Q402 2SC4617
R408 0
R410 0
C406 0.01 B
R420 390
R421 150
C407 1000p
C401 22μ 6.3V :Ta
PAYB
STBY
PWON
ANALOG SW CONTROL
1/2
1/N
1/M
MODE CONT-ROL
OSCO
XT OUT
XT IN
POLA
TEST
BVcc
R417 0
C411 0.047
R412 100k
R411 100k
C410 0.047
R414 100k
R415 100k
PC
PC15
PC17
INV15
INV17
R413 12k
R416 12k
IC402 CXD2106Q
ADUT
CAR
BIAS
AVdd
AVcc
CAPA
Vcc/2
C414 22 4V :3
C415 22 4V :3
C416 0.1 25V B
R423 33k
C413 22 4V :3
C412 22 4V :3
R425 100k 0.5%
R427 100k 0.5%
R452 10k
C491 1 F:2125
R449 4700
R450 15k
C494 0.01 F
C492 0.01 F
Q422 2SA1774
R451 33k
Q423 2SC4617
R453 5600
R454 10k
C493 1000p B
C443 10 6.3V :TA
R439 0 1/10W
R438 6800 0.5%
R475 100k 0.5%
R440 100k
R441 0
CL404
1.7M
C444 0.01 B
C445 0.01 B
C446 10 6.3V :TA
C447 1 20V :TA(A)
C448 0.47 35V :TA (A)
C449 0.47 35V :TA (A)
C450 0.01 B
C451 0.047 B (2125)
R442 33k 0.5%
C452 330p CH
C453 1 20V :TA (A)
R444 0
R443 100k
C454 0.01 B
C455 0.01 B
C456 0.01 B
1.5M
CL401 2.2
IC401 CXA1542
R445 100k 0.5%
R446 8200 0.5%
R476 0 1/10W
IC401
STEREO AFM
C420 10 6.3V :TA
Q410
REC AFM
MIX AMP
R541 1500
R542 22k
C544 0.01 F
R546 1500
R547 1500
Q411 2SC4617
R548 10k
Q412 DTC144EE
Q411, 412
SWITCH
Q410 UMX1
R543 18k
C543 0.01 F
C541 0.01 F
R544 3300
R545 3300
C542 0.01
R549 2700
C545 0.01 F
1.7M
1.5M
R560 1k
FL401 1.7M
R562 1k
C549 0.01
R561 1k
R563 0
FL402 1.5M
R564 1k
C548 6800p B
R555 1500
R557 22k
R551 22k
Q414 2SC4617
Q413 UMX1
R554 390
R552 18k
R558 18k
R559 1k
C547 0.01 B
R553 1500
R556 1500
C546 0.01 F
Q413, 414
PB RF AMP
R572 100k

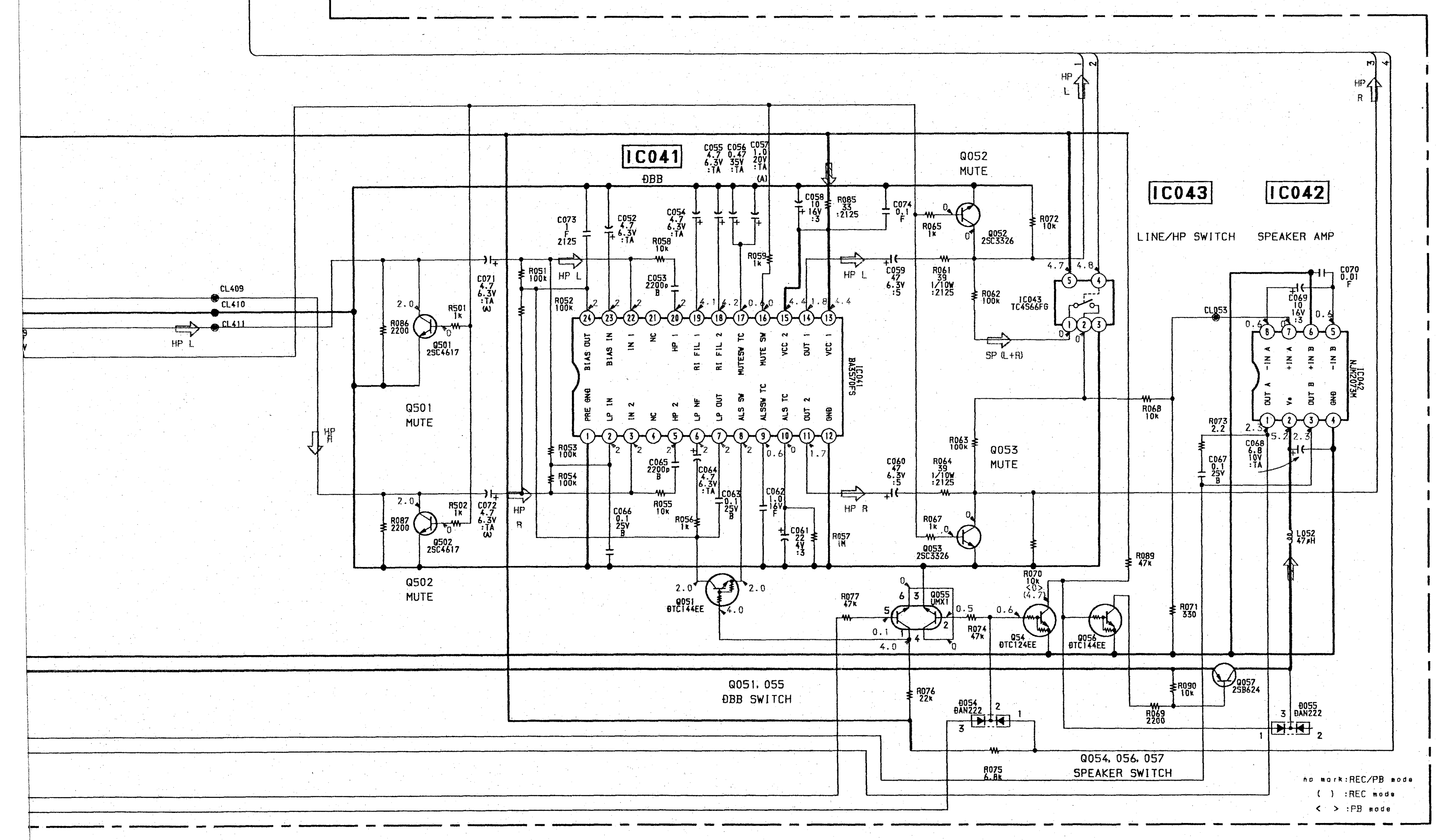

9
10
11
12
13
14
15
16
17
18
19
20
Q422-427
NOT USED
Q593, 594
SWITCH
IC401
CXA1542
STEREO
AFM
IC403
CXA1211M
DEVIATION
ADJUST
Q428
DTC144EE
SWITCH
Q591, 592
MUTE
Q415
POWER
ON/OFF
MUTE
Q416, 417
MUTE
LOGIC
IC404
μPD4066BB
Q404
MUTE
IC406
μPD4066BB
Q405
MUTE
Q406
INVERTER
Q406
UMH2
Q408, 409
LINE
STEREO
DETECT
Q418, 419
CURRENT
LIMITER
J401
LN0401
PS401
CCP2E25
(1A)
PS402
CCP2E25
(1A)
D403
MA3075WA
D404
MA3075WA
D405
MA3075WA
L402
10μH
HP L
HP R
CL409
CL410
CL411
CL412
CL413
CL414


8
9
10
11
12
13
14
15
16
17
18
19
IC401
CXA1542
STEREO
AFM
IC403
CXA1211M
DEVIATION
ADJUST
IC404
μPD4066BD
IC406
μPD4066BD
Q422-427
NOT USED
Q593, 594
SWITCH
Q428
BTC144EE
SWITCH
Q591, 592
MUTE
Q415
POWER
ON/OFF
MUTE
Q416, 417
MUTE
LOGIC
Q404
MUTE
Q405
MUTE
Q406
INVERTER
Q418, 419
CURRENT
LIMITER
Q408, 409
LINE
STEREO
DETECT
11, 412
SWITCH
HP R
HP L
L
R


19
20
21
22
23
24
25
26
27
28
LN0401
D405 MA3075WA
PS402 CCP2E25 (1A)
J401
VIDEO
B.C OUT
AUDIO L
AUDIO R
L402 10μH
D403 MA3075WA
R536 100k
R537 100k
C532 1000p B
C533 1000p B
CL412
CL413
CL414
PS401 CCP2E25 (1A)
D404 MA3075WA
L
R
Q408, 409 LINE STEREO DETECT
Q406 VERTER

• SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC			➡⟫	➡
PB			⇨⟫	⇨


IC041
DBB
IC043
LINE/HP SWITCH
IC042
SPEAKER AMP
Q501 MUTE
Q502 MUTE
Q052 MUTE
Q053 MUTE
Q051, 055 DBB SWITCH
Q054, 056, 057 SPEAKER SWITCH
IC041 BA3570FS
IC043 TC4S66F
IC042 NJM2073M
Q501 2SC4617
Q502 2SC4617
Q052 2SC5326
Q053 2SC5326
Q051 DTC144EE
Q055 UMX1
Q054 DTC124EE
Q056 DTC144EE
Q057 2SB624
D054 DAN222
D055 DAN222
L052 47μH
CL409
CL410
CL411
CL053
HP L
HP R
SP (L+R)
PRE GND
LP IN
IN 2
NC
HP 2
LP NF
LP OUT
ALS SW
ALSSW TC
ALS TC
OUT 2
GND
BIAS OUT
BIAS IN
IN 1
HP 1
RI FIL 1
RI FIL 2
MUTESW TC
MUTE SW
VCC 2
OUT 1
VCC 1
OUT A
-IN A
Vs
+IN A
OUT B
+IN B
-IN B
no mark:REC/PB mode
( ) :REC mode
< > :PB mode

SL-26 (FG/PG WAVEFORM SHAPING), FP-442 (MODE SWITCH), LM-40 (LOADING MOTOR), LS-33 (MECH SENSOR) PRINTED WIRING BOARDS

- FP-442, LM-40, LS-33 boards are replaced as blocks, so that there PRINTED WIRING BOARDS are omitted.

SL-26 BOARD	
IC101	I-3
Q101	H-3

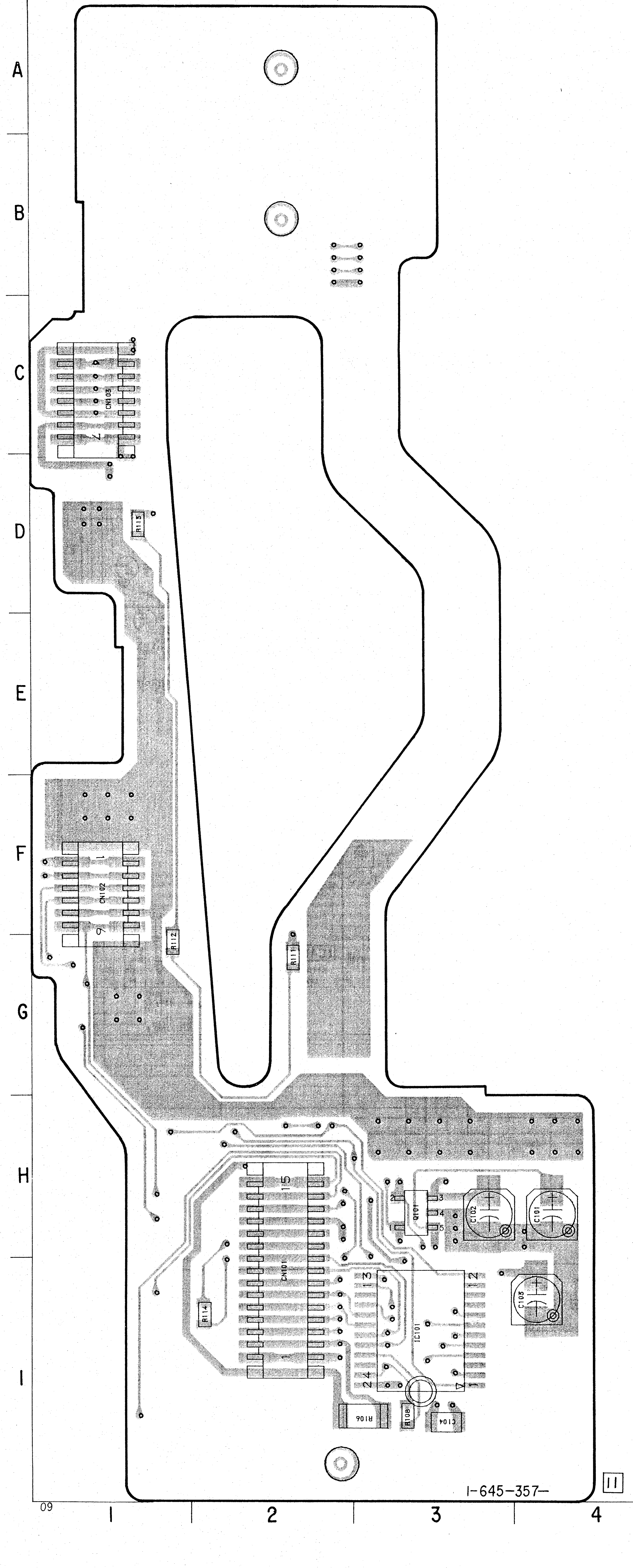
〈 IC 〉

IC101 8-759-059-09 IC LB8111V

〈 TRANSISTOR 〉

Q101 8-729-902-93 TRANSISTOR FMG4

SL-26 BOARD (COMPONENT SIDE)


A
B
C
D
E
F
G
H
I
1
2
3
4
09
CN103
7
4
R115
CN102
1
9
R112
R111
CN101
1
15
R114
IC101
24
13
1
12
Q101
3
4
5
C101
C102
C103
C104
R106
R108
1-645-357-
11

SL-26 (FG/PG WAVEFORM SHAPING), FP-442 (MODE SWITCH), LM-40 (LOADING MOTOR), LS-33 (MECH SENSOR) PRINTED WIRING BOARDS

- FP-442, LM-40, LS-33 boards are replaced as blocks, so that there PRINTED WIRING BOARDS are omitted.

SL-26 BOARD	
IC101	I-3
Q101	H-3

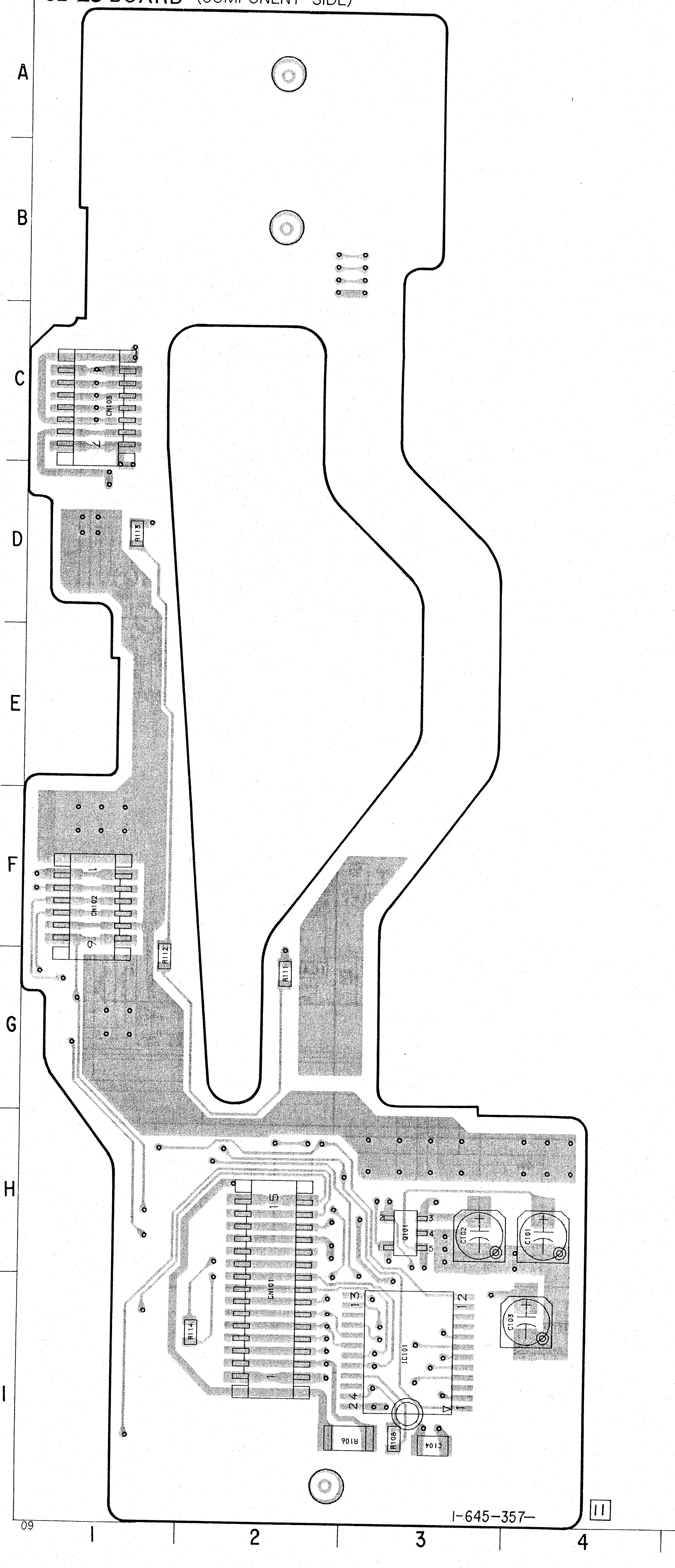
(IC)

IC101 8-759-059-09 IC LB8111V

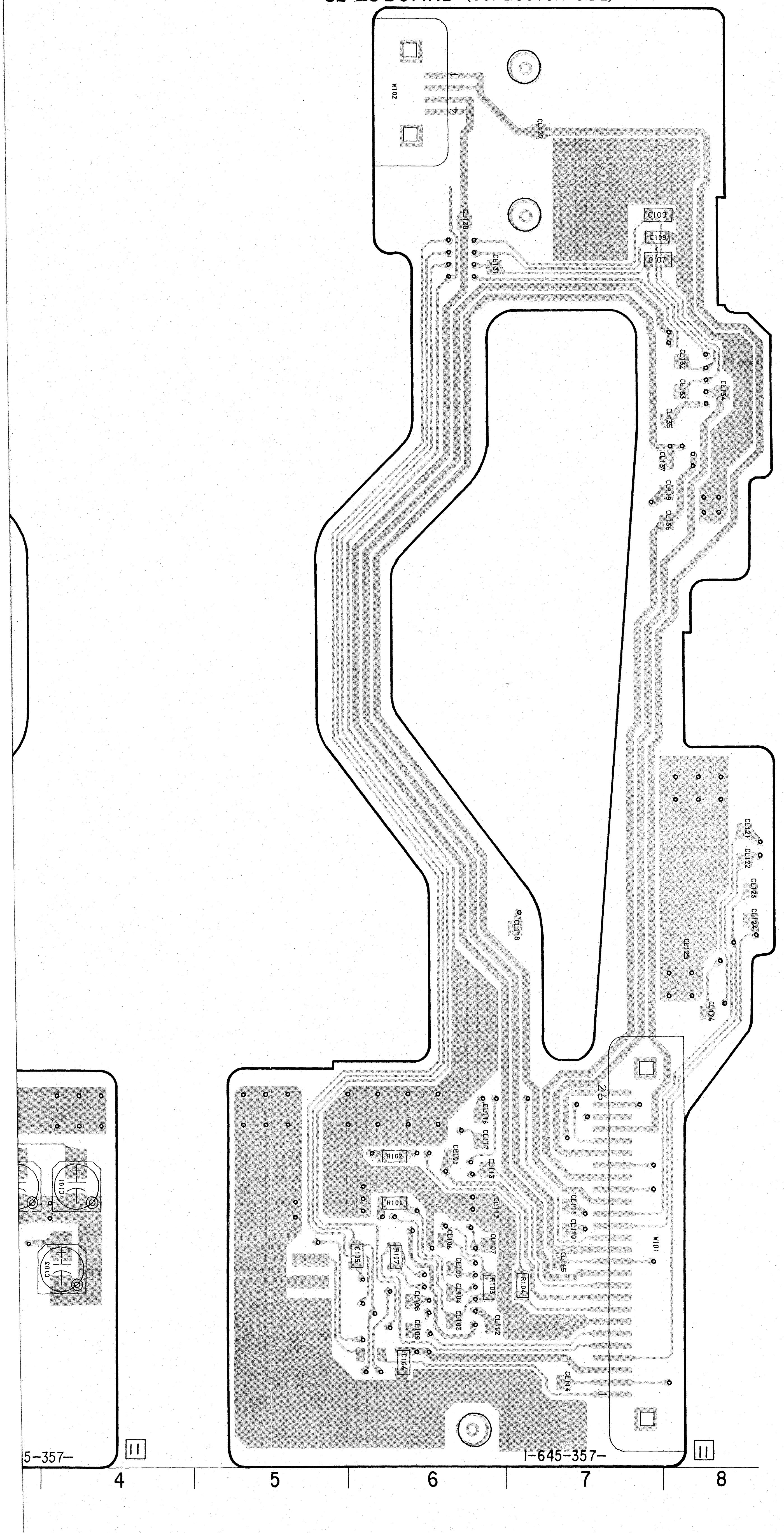
(TRANSISTOR)

Q101 8-729-902-93 TRANSISTOR FMG4

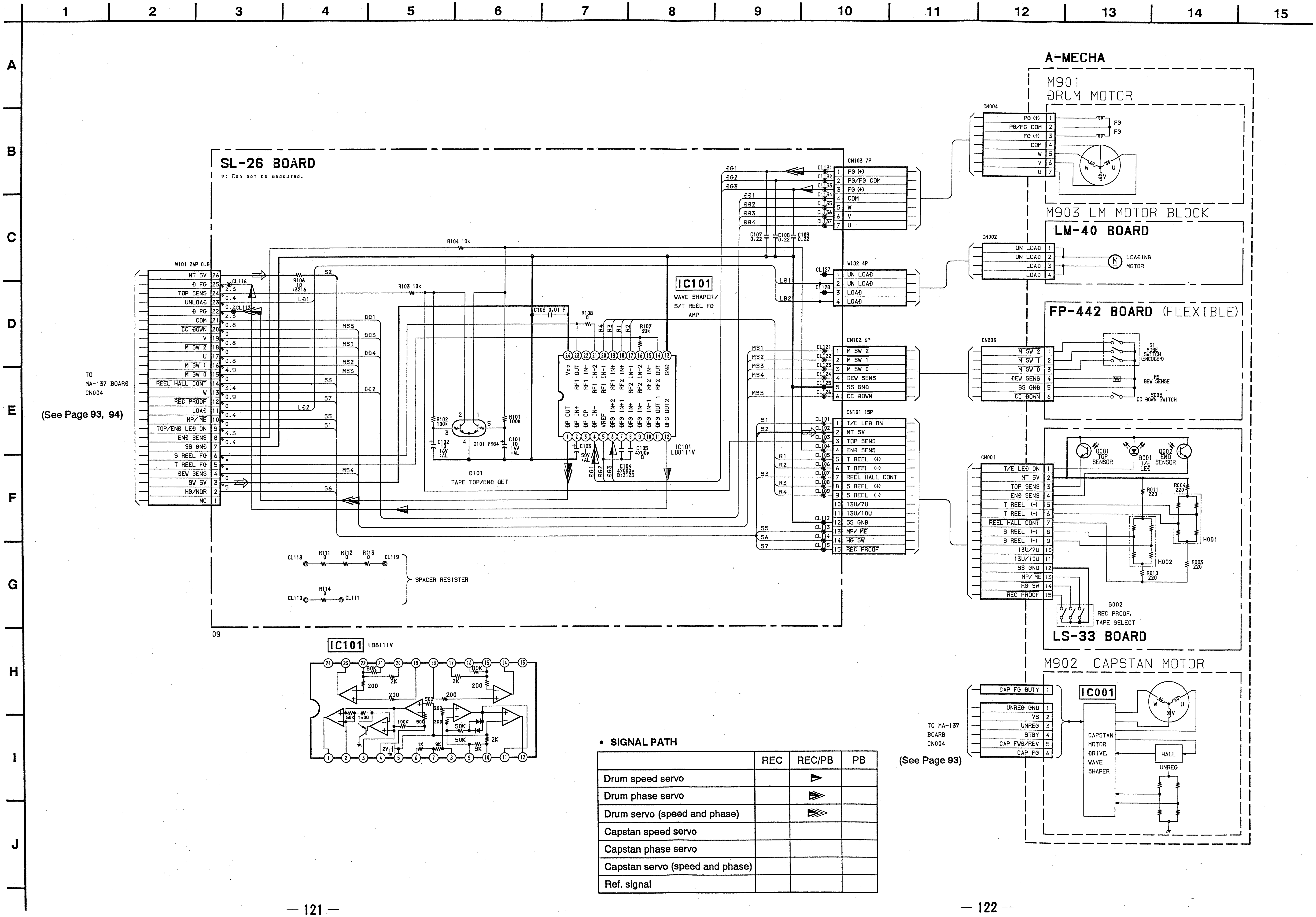
SL-26 BOARD (COMPONENT SIDE)


A
B
C
D
E
F
G
H
I
1
2
3
4
CN103
4
7
R113
CN102
1
9
R112
R111
CN101
15
1
R114
IC101
13
24
1
12
Q101
1
2
3
4
5
C102
C101
C103
R106
R108
C104
1-645-357-
11
09

SL-26 BOARD (CONDUCTOR SIDE)


M102
1
4
CL127
CL128
CL131
C109
C108
C107
CL132
CL133
CL134
CL135
CL137
CL119
CL136
CL121
CL122
CL123
CL124
CL125
CL126
CL118
26
CL116
CL117
CL101
CL113
R102
R101
CL112
CL111
CL110
M101
CL106
CL107
C105
R107
CL105
CL104
R103
R104
CL115
CL108
CL103
CL102
CL109
C106
CL114
C101
C103
5-357-
1-645-357-
11
4
5
6
7
8

SL-26 (FG/PG WAVEFORM SHAPING), FP-442 (MODE SWITCH), LM-40 (LOADING MOTOR), LS-33 (MECH SENSOR) SCHEMATIC DIAGRAMS


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
A
B
C
D
E
F
G
H
I
J
SL-26 BOARD
*: Can not be measured.
W101 26P 0.8
MT 5V
D FG
TOP SENS
UNLOAD
D PG
COM
CC DOWN
V
M SW 2
U
M SW 1
M SW 0
REEL HALL CONT
W
REC PROOF
LOAD
MP/ME
TOP/END LED ON
END SENS
SS GND
S REEL FG
T REEL FG
DEW SENS
SW 5V
HG/NOR
NC
TO
MA-137 BOARD
CN004
(See Page 93, 94)
R104 10k
R103 10k
R106 10
IC101
WAVE SHAPER/
S/T REEL FG
AMP
C106 0.01 F
R108
R107 39k
Q101 FMG4
Q101
TAPE TOP/END DET
R102 100k
R101 100k
C102
C101
C103
C104
C105 4700p
IC101
LB8111V
CL118
R111 0
R112 0
R113 0
CL119
R114 0
CL110
CL111
SPACER RESISTER
09
IC101 LB8111V
CN103 7P
PG (+)
PG/FG COM
FG (+)
COM
W
V
U
C107 0.22
C108 0.22
C109 0.22
W102 4P
UN LOAD
UN LOAD
LOAD
LOAD
CN102 6P
M SW 2
M SW 1
M SW 0
DEW SENS
SS GND
CC DOWN
CN101 15P
T/E LED ON
MT 5V
TOP SENS
END SENS
T REEL (+)
T REEL (-)
REEL HALL CONT
S REEL (+)
S REEL (-)
13U/7U
13U/10U
SS GND
MP/ME
HG SW
REC PROOF
A-MECHA
M901
DRUM MOTOR
CN004
PG
FG
M903 LM MOTOR BLOCK
LM-40 BOARD
CN002
LOADING
MOTOR
FP-442 BOARD (FLEXIBLE)
CN003
S1
MODE SWITCH
(ENCODER)
R9
DEW SENSE
S005
CC DOWN SWITCH
CN001
Q001
TOP SENSOR
D001
T/E LED
Q002
END SENSOR
H001
H002
S002
REC PROOF.
TAPE SELECT
LS-33 BOARD
M902 CAPSTAN MOTOR
CAP FG DUTY
UNREG GND
VS
UNREG
STBY
CAP FWD/REV
CAP FG
TO MA-137
BOARD
CN004
(See Page 93)
IC001
CAPSTAN
MOTOR
DRIVE,
WAVE
SHAPER
HALL
UNREG

- **SIGNAL PATH**

	REC	REC/PB	PB
Drum speed servo		▷	
Drum phase servo		▷▷	
Drum servo (speed and phase)		▷▷▷	
Capstan speed servo			
Capstan phase servo			
Capstan servo (speed and phase)			
Ref. signal			

TU-142 (TUNER) PRINTED WIRING BOARD

TU-142 BOARD

D100	D-10
Q100	C-2
Q102	C-3
Q103	D-3
Q105	D-7
Q106	C-10
Q107	D-10
Q108	B-10
Q109	C-9
Q111	B-9

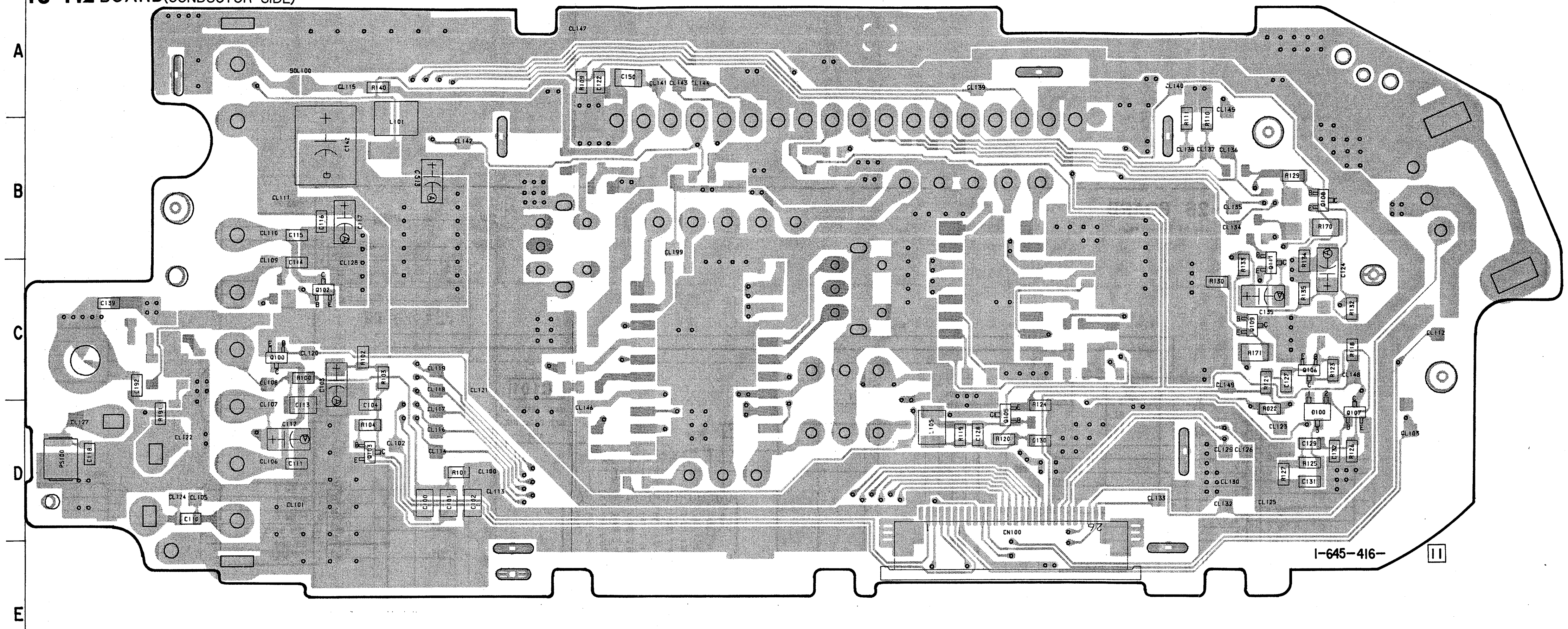
〈 DIODE 〉

D100	8-719-941-09	DIODE DAP202U

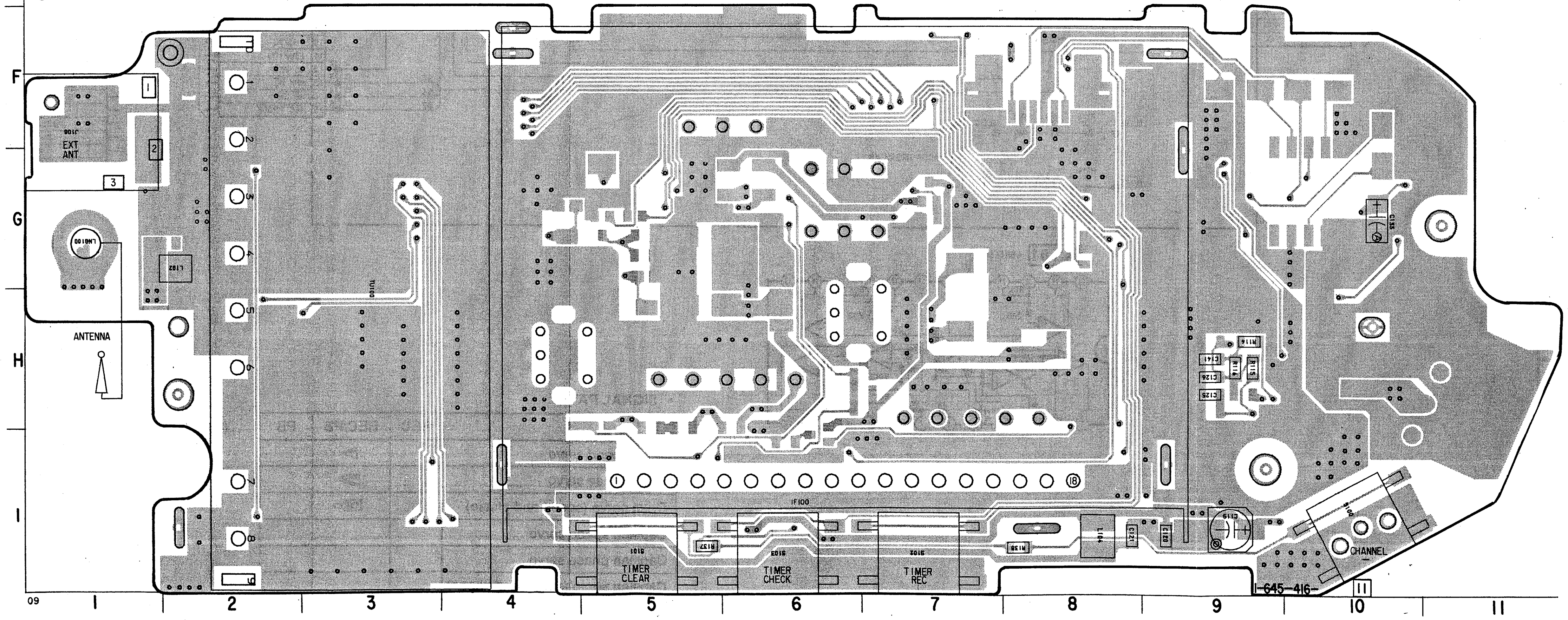
〈 TRANSISTOR 〉

Q100	8-729-928-42	TRANSISTOR DTA143EE
Q102	8-729-928-42	TRANSISTOR DTA143EE
Q103	8-729-425-64	TRANSISTOR 2SD2216Q
Q105	8-729-425-64	TRANSISTOR 2SD2216Q
Q106	8-729-425-50	TRANSISTOR 2SB1462Q
Q107	8-729-425-64	TRANSISTOR 2SD2216Q
Q108	8-729-425-64	TRANSISTOR 2SD2216Q
Q109	8-729-425-64	TRANSISTOR 2SD2216Q
Q111	8-729-425-64	TRANSISTOR 2SD2216Q

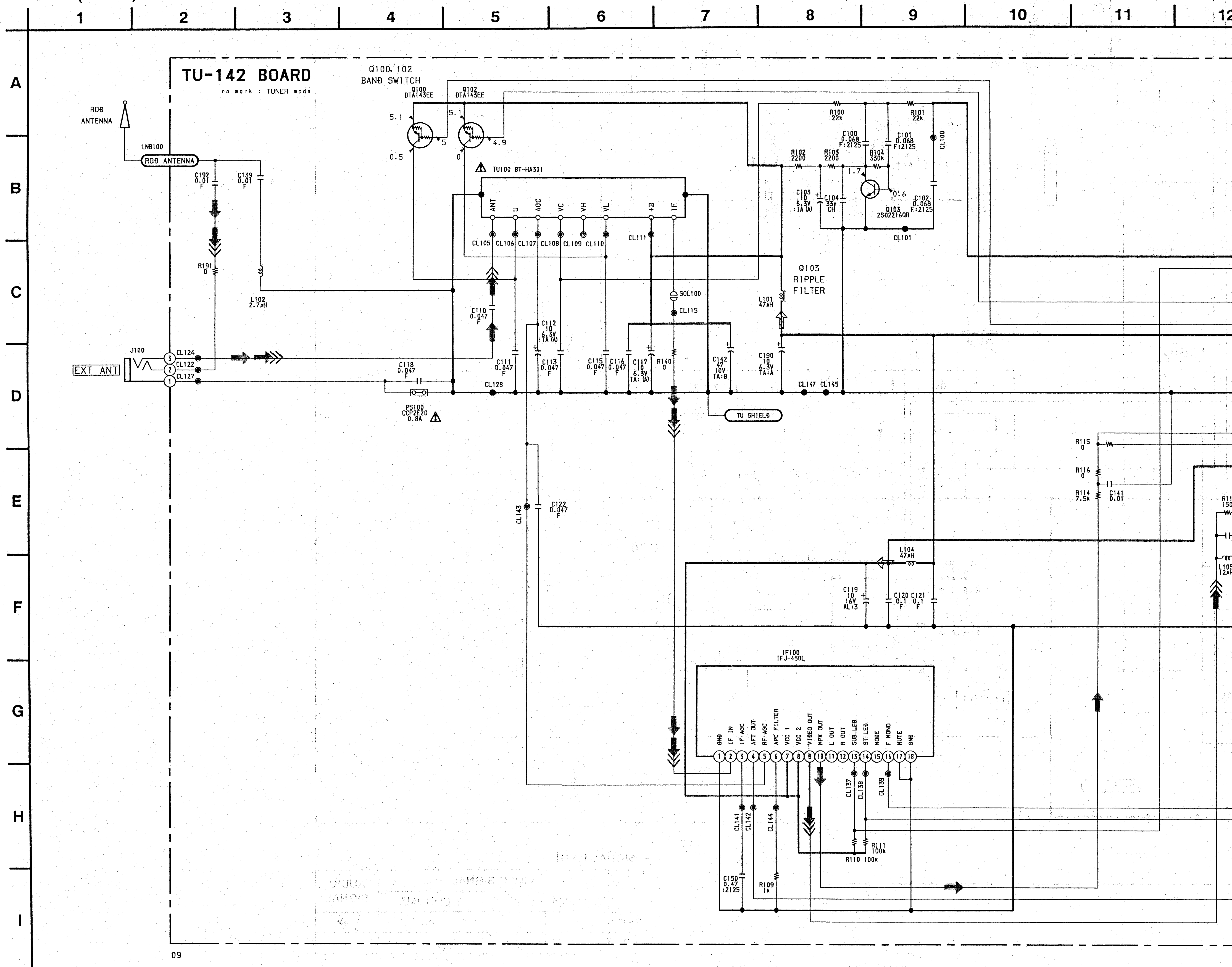
TU-142 BOARD(CONDUCTOR SIDE)


A
B
C
D
E
CN100
1-645-416-
11

TU-142 BOARD(COMPONENT SIDE)

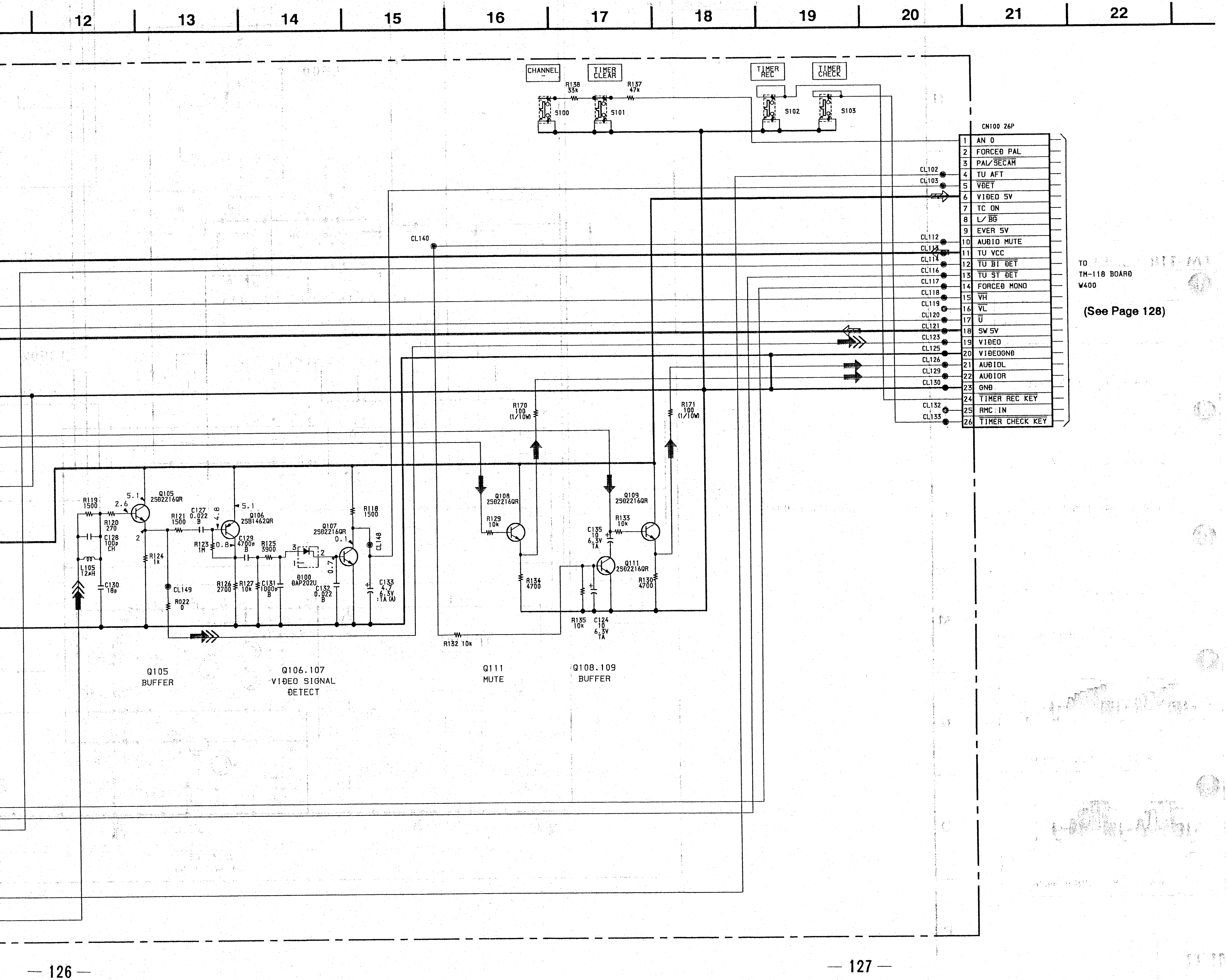

F
G
H
I
EXT ANT
ANTENNA
IF100
TIMER CLEAR
TIMER CHECK
TIMER REC
CHANNEL
1-645-416-
11
09
1
2
3
4
5
6
7
8
9
10
11

TU-142 (TUNER) SCHEMATIC DIAGRAM

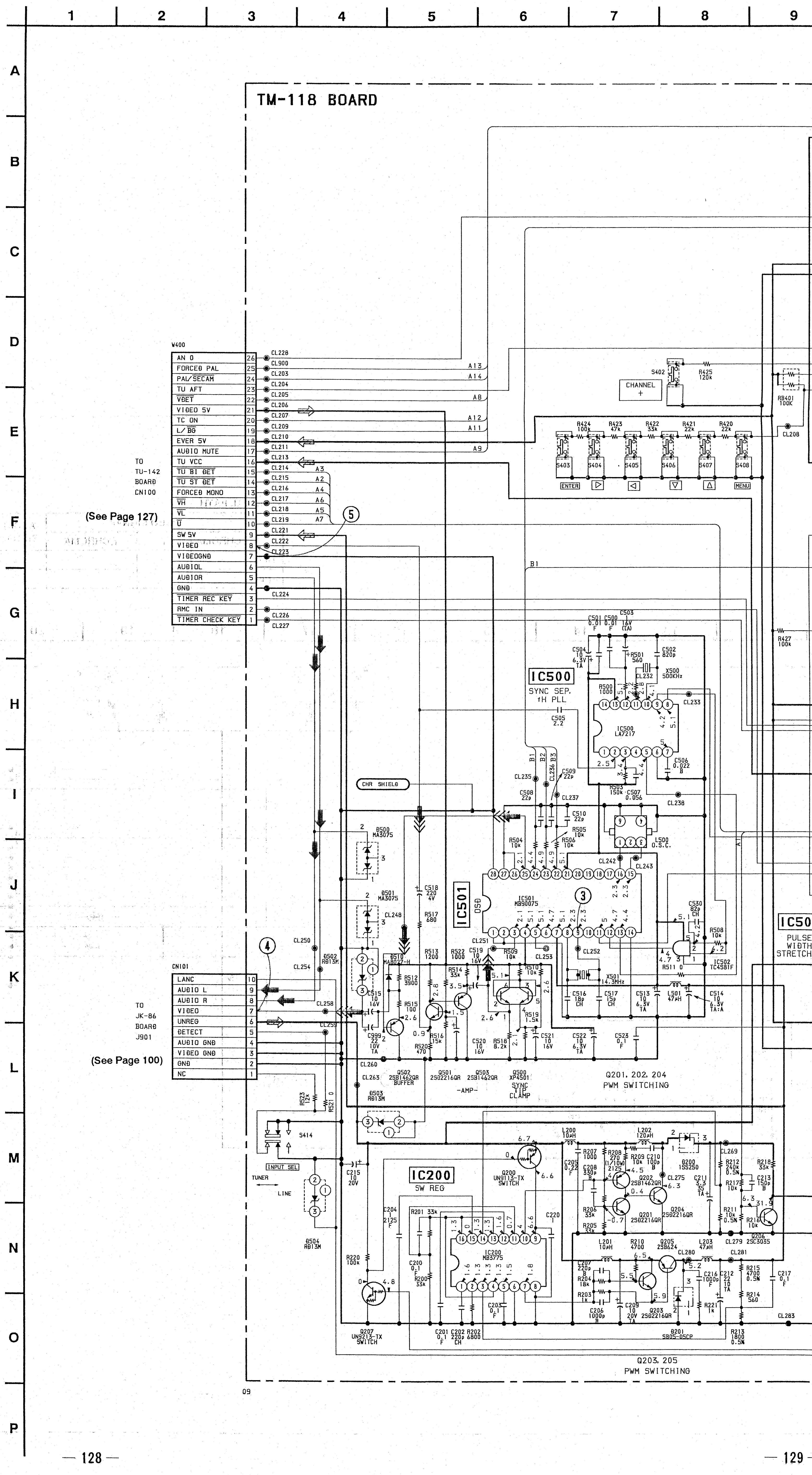

1
2
3
4
5
6
7
8
9
10
11
A
B
C
D
E
F
G
H
I
TU-142 BOARD
no mark : TUNER mode
ROD ANTENNA
LNB100
ROD ANTENNA
C192 0.01 F
C139 0.01 F
R191 0
L102 2.7μH
J100
EXT ANT
CL124
CL122
CL127
C118 0.047 F
PS100 CCP2E20 0.8A
Q100, 102 BAND SWITCH
Q100 DTA143EE
Q102 DTA143EE
5.1
0.5
5
5.1
0
4.9
TU100 BT-HA301
ANT
U
AGC
VC
VH
VL
+B
IF
CL105
CL106
CL107
CL108
CL109
CL110
CL111
C110 0.047 F
C111 0.047 F
C112 10 6.3V :TA (A)
C113 0.047 F
C115 0.047 F
C116 0.047 F
C117 10 6.3V TA: (A)
R140 0
C142 47 10V TA:D
CL128
SOL100
CL115
TU SHIELD
R100 22k
R101 22k
C100 0.068 F:2125
C101 0.068 F:2125
CL100
R102 2200
R103 2200
R104 330k
1.7
0.6
C103 10 6.3V :TA (A)
C104 33p CH
C102 0.068 F:2125
Q103 2SD2216QR
CL101
Q103 RIPPLE FILTER
L101 47μH
C190 10 6.3V TA:A
CL147
CL145
CL143
C122 0.047 F
L104 47μH
C119 10 16V AL:3
C120 0.1 F
C121 0.1 F
R115 0
R116 0
R114 7.5k
C141 0.01
L105 12μH
IF100 IFJ-450L
GND
IF IN
IF AGC
AFT OUT
RF AGC
APC FILTER
VCC 1
VCC 2
VIDEO OUT
MPX OUT
L OUT
R OUT
SUB.LED
ST LED
MODE
F MONO
MUTE
GND
CL137
CL138
CL139
CL141
CL142
CL144
R111 100k
R110 100k
C150 0.47 :2125
R109 1k
09

- **SIGNAL PATH**

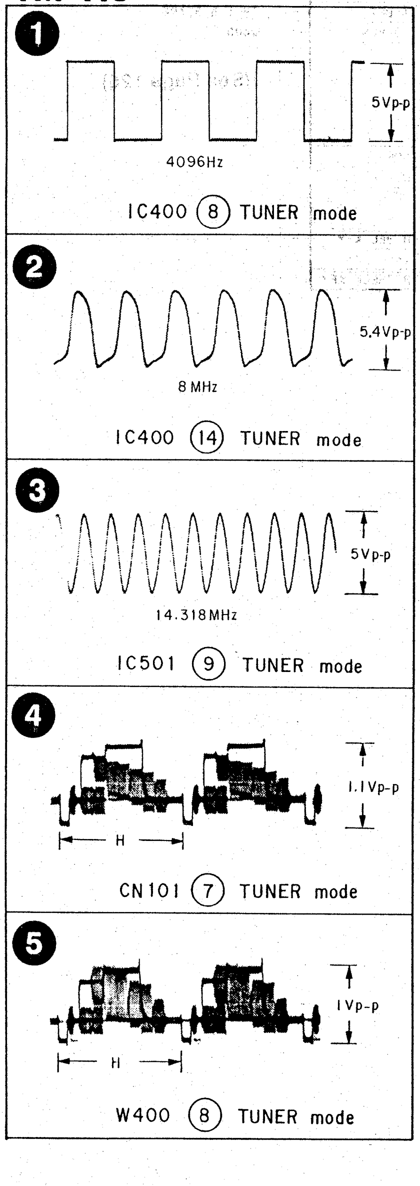
	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC			⇛	➡
PB				

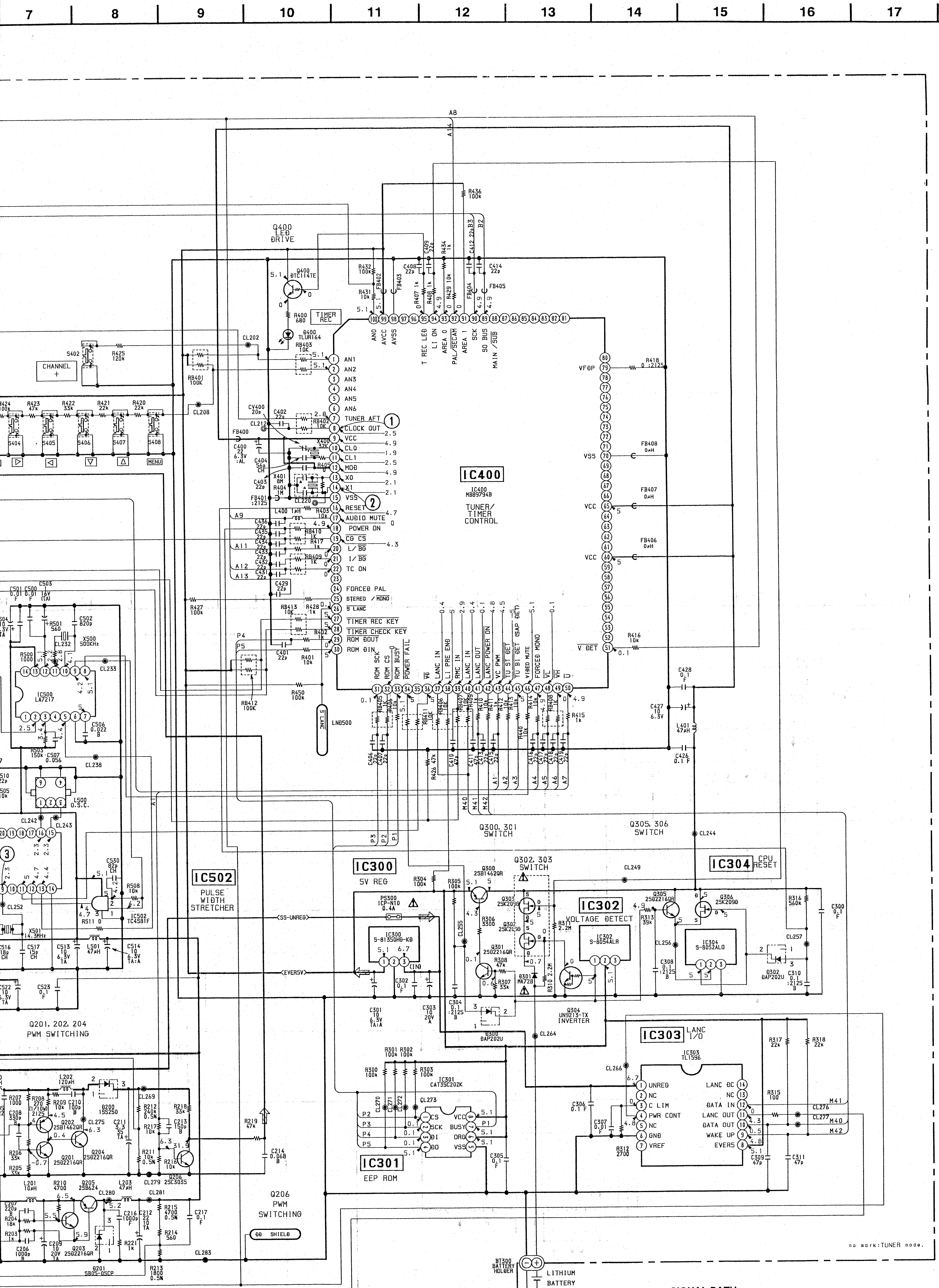

12
13
14
15
16
17
18
19
20
21
22
CHANNEL
TIMER CLEAR
TIMER REC
TIMER CHECK
R138 33k
R137 47k
S100
S101
S102
S103
CN100 26P
1 AN 0
2 FORCED PAL
3 PAL/SECAM
4 TU AFT
5 VDET
6 VIDEO 5V
7 TC ON
8 L/BG
9 EVER 5V
10 AUDIO MUTE
11 TU VCC
12 TU BI DET
13 TU ST DET
14 FORCED MONO
15 VH
16 VL
17 U
18 SW 5V
19 VIDEO
20 VIDEOGND
21 AUDIOL
22 AUDIOR
23 GND
24 TIMER REC KEY
25 RMC IN
26 TIMER CHECK KEY
CL102
CL103
CL112
CL113
CL114
CL116
CL117
CL118
CL119
CL120
CL121
CL123
CL125
CL126
CL129
CL130
CL132
CL133
CL140
CL148
CL149
TO
TM-118 BOARD
W400
(See Page 128)
R170 100 (1/10W)
R171 100 (1/10W)
Q108 2SD2216QR
Q109 2SD2216QR
R129 10k
R133 10k
C135 10 6.3V TA
Q111 2SD2216QR
R134 4700
R130 4700
R135 10k
C124 10 6.3V TA
R132 10k
Q105 2SD2216QR
Q106 2SB1462QR
Q107 2SD2216QR
R119 1500
R120 270
C128 100p CH
L105 12μH
C130 18p
R121 1500
C127 0.022 B
R124 1k
R123 1M
C129 4700p B
R125 3900
R126 2700
R127 10k
C131 1000p B
D100 DAP202U
C132 0.022 B
R118 1500
C133 4.7 6.3V TA
R022 0
5.1
2.6
2
4.8
5.1
0.8
0.7
0.1
3
1
2
Q105
BUFFER
Q106.107
VIDEO SIGNAL
DETECT
Q111
MUTE
Q108.109
BUFFER

TM-118 (TUNER/TIMER CONTROL) SCHEMATIC DIAGRAM


TM-118 BOARD
W400
AN 0
FORCED PAL
PAL/SECAM
TU AFT
VDET
VIDEO 5V
TC ON
L/BG
EVER 5V
AUDIO MUTE
TU VCC
TU BI DET
TU ST DET
FORCED MONO
VH
VL
U
SW 5V
VIDEO
VIDEOGND
AUDIOL
AUDIOR
GND
TIMER REC KEY
RMC IN
TIMER CHECK KEY
TO TU-142 BOARD CN100
(See Page 127)
CN101
LANC
AUDIO L
AUDIO R
VIDEO
UNREG
DETECT
AUDIO GND
VIDEO GND
GND
NC
TO JK-86 BOARD J901
(See Page 100)
CHANNEL +
ENTER
MENU
IC500
SYNC SEP. fH PLL
IC500 LA7217
X500 500kHz
CHR SHIELD
IC501
OSD
IC501 MB90075
X501 14.3MHz
L500 O.S.C.
IC502 TC4S81F
IC50
PULSE WIDTH STRETCH
Q502 2SB1462QR BUFFER
Q501 2SD2216QR
Q503 2SB1462QR
-AMP-
Q500 XP4501 SYNC TIP CLAMP
Q201, 202, 204 PWM SWITCHING
S414
INPUT SEL
TUNER
LINE
IC200
SW REG
IC200 MB3775
Q200 UN9113-TX SWITCH
Q207 UN9213-TX SWITCH
Q203, 205 PWM SWITCHING
D201 SB05-05CP

TM-118 BOARD



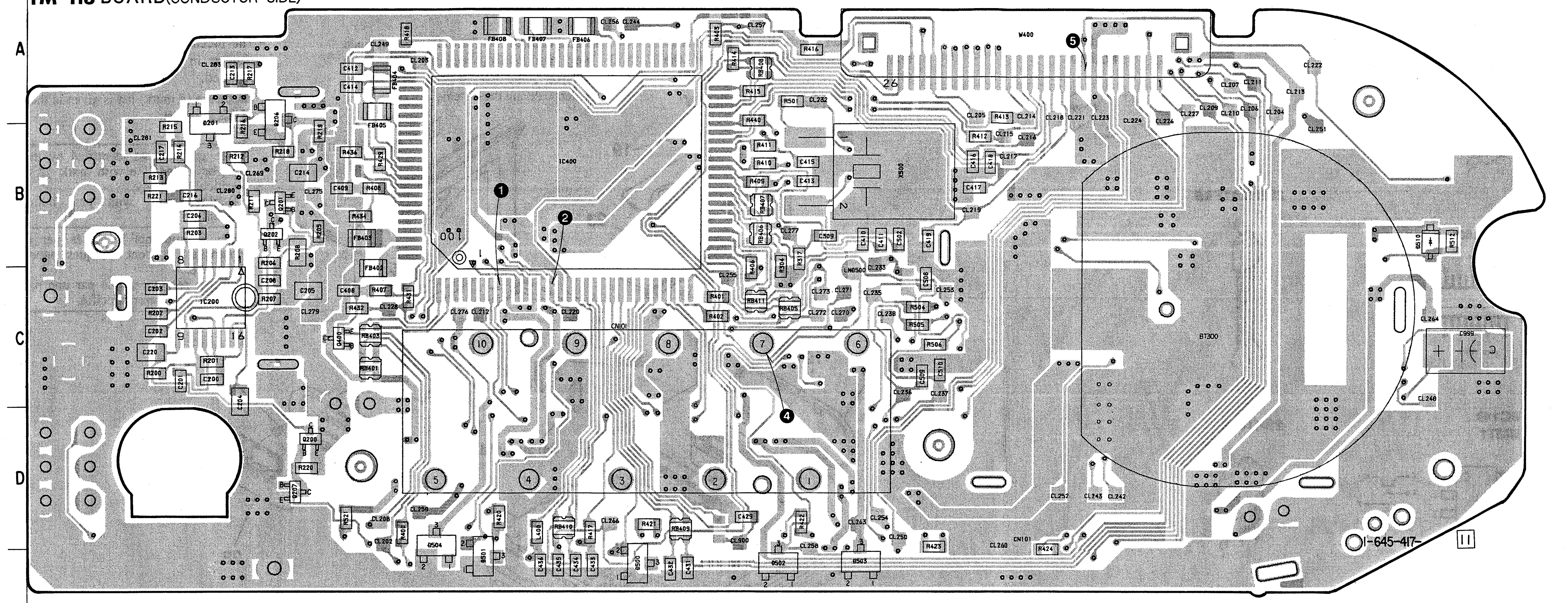

7
8
9
10
11
12
13
14
15
16
17
IC400
IC400 MB89794B
TUNER/ TIMER CONTROL
Q400 LED DRIVE
Q400 DTC114TE
D400 TLUR164
TIMER REC
CHANNEL +
S402
S404
S405
S406
S407
S408
MENU
AN1
AN2
AN3
AN4
AN5
AN6
TUNER AFT
CLOCK OUT
VCC
CL0
CL1
MOD
X0
X1
VSS
RESET
AUDIO MUTE
POWER ON
CG CS
L/BG
I/BG
TC ON
FORCED PAL
STEREO /MONO
S LANC
TIMER REC KEY
TIMER CHECK KEY
ROM DOUT
ROM DIN
ROM SCK
ROM CS
ROM BUSY
POWER FAIL
V0
LANC IN
LI PRE END
RMC IN
LANC IN
LANC OUT
LANC POWER ON
VC PWM
TU ST DET
TU BI DET (SAP DET)
VIDEO MUTE
FORCED MONO
VL
VH
V DET
VFDP
VSS
VCC
VCC
ANO
AVCC
AVSS
T REC LED
LI ON
AREA 0
PAL/SECAM
AREA 1
SCK
SO BUS
MAIN /SUB
IC500 LA7217
IC502 TC4S81F
IC502 PULSE WIDTH STRETCHER
IC300 5V REG
IC300 S-81350HG-KD
PS300 ICP-N10 0.4A
IC301 EEP ROM
IC301 CAT35C202K
CS
SCK
DI
DO
VCC
BUSY
ORG
VSS
IC302 VOLTAGE DETECT
IC302 S-8054ALR
IC303 LANC I/O
IC303 TL1596
UNREG
NC
C LIM
PWR CONT
NC
GND
VREF
LANC DC
NC
DATA IN
LANC OUT
DATA OUT
WAKE UP
EVERS
IC304 CPU RESET
IC304 S-8052ALO
Q300 2SB1462QR
Q301 2SD2216QR
Q302, 303 SWITCH
Q302 2SK2090
Q303 2SK2090
Q304 UN9213-TX INVERTER
Q300, 301 SWITCH
Q305, 306 SWITCH
Q305 2SD2216QR
Q306 2SK2090
D300 DAP202U
D301 MA728
D302 DAP202U
Q201, 202, 204 PWM SWITCHING
Q206 PWM SWITCHING
Q203, 205 PWM SWITCHING
Q200 1SS250
Q201 2SD2216QR
Q202 2SB1462QR
Q203 2SD2216QR
Q205 2SB624
Q206 2SC3035
D201 SB05-05CP
X500 500KHz
X501 14.3MHz
X400 32K
X401 8M
L500 O.S.C.
LND500
S LANC
DD SHIELD
BT300 BATTERY HOLDER
LITHIUM BATTERY CR2032
<SS-UNREG>
<EVER5V>
no mark:TUNER mode.

• **SIGNAL PATH**

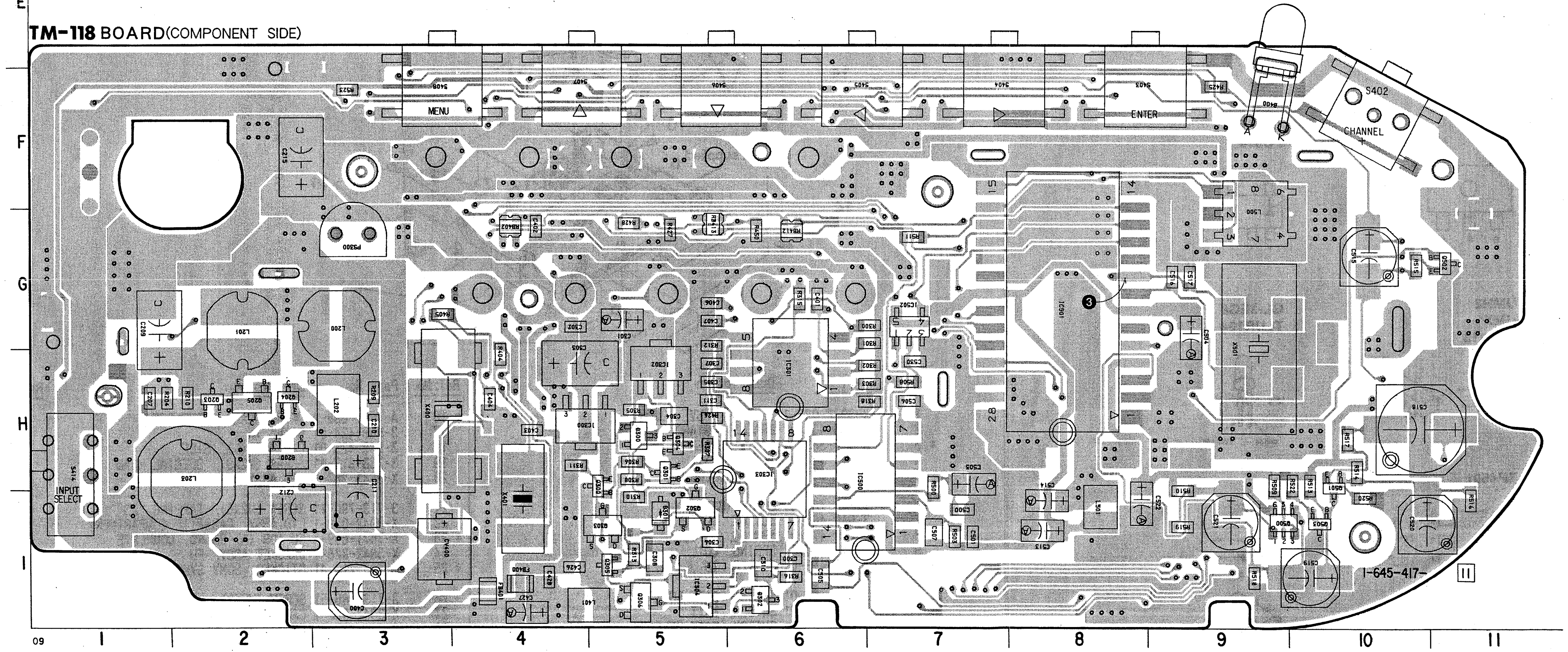
	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC			⇛	➡
PB				

TM-118 (TUNER/TIMER CONTROL) PRINTED WIRING BOARD

TM-118 BOARD(CONDUCTOR SIDE)



TM-118 BOARD(COMPONENT SIDE)



TM-118 BOARD

D200	H-2	Q200	D-2
D201	B-2	Q201	B-2
D300	H-5	Q202	B-2
D301	I-5	Q203	H-2
D302	I-6	Q204	H-2
D400	F-9	Q205	H-2
D500	E-5	Q206	A-2
D501	E-4	Q207	D-2
D502	E-6	Q300	I-5
D503	E-6	Q301	H-5
D504	D-3	Q302	I-5
D510	B-10	Q303	I-5
		Q304	H-5
IC200	C-2	Q305	I-5
IC300	H-4	Q306	I-5
IC301	H-6	Q400	C-3
IC302	H-5	Q500	I-9
IC303	H-6	Q501	I-10
IC304	I-5	Q502	G-11
IC400	B-4	Q503	I-10
IC500	H-6		
IC501	G-8		
IC502	G-7		

〈 DIODE 〉

D200	8-719-802-36	DIODE 1SS250
D201	8-719-938-75	DIODE SB05-05CP
D300	8-719-941-09	DIODE DAP202U
⚠D301	8-719-421-27	DIODE MA728
D302	8-719-941-09	DIODE DAP202U
D400	8-719-800-56	LED TLUR164
D500	8-719-420-81	DIODE MA3075WA
D501	8-719-420-81	DIODE MA3075WA
D502	8-719-106-80	DIODE RD13M-B2
D503	8-719-106-80	DIODE RD13M-B2
D504	8-719-106-80	DIODE RD13M-B2
D510	8-719-421-15	DIODE MA8027

〈 IC 〉

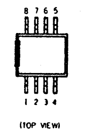
IC200	8-759-990-45	IC MB3775PFV
IC300	8-759-512-69	IC S-81350HG-KD
IC301	8-759-720-45	IC CAT35C202K
IC302	8-759-946-03	IC S-8054ALR-LN-S
IC303	8-759-999-02	IC TL1596CDB
IC304	8-759-940-33	IC S-8052ALO-LG-S
IC400	8-759-083-08	IC MB89794BPF-177
IC500	8-759-083-11	IC LA7217M
IC501	8-759-098-47	IC MB90075PF-122
IC502	8-759-209-97	IC TC4S81F

〈 TRANSISTOR 〉

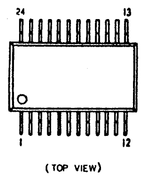
Q200	8-729-428-88	TRANSISTOR UN9113
Q201	8-729-425-64	TRANSISTOR 2SD2216Q
Q202	8-729-425-50	TRANSISTOR 2SB1462Q
Q203	8-729-425-64	TRANSISTOR 2SD2216Q
Q204	8-729-425-64	TRANSISTOR 2SD2216Q
Q205	8-729-141-48	TRANSISTOR 2SB624-BV345
Q206	8-729-601-58	TRANSISTOR 2SC3053-C
Q207	8-729-429-18	TRANSISTOR UN9213
Q300	8-729-425-50	TRANSISTOR 2SB1462Q
Q301	8-729-425-64	TRANSISTOR 2SD2216Q
⚠Q302	8-729-220-93	TRANSISTOR 2SK209-G
⚠Q303	8-729-220-93	TRANSISTOR 2SK209-G
Q304	8-729-429-18	TRANSISTOR UN9213
Q305	8-729-425-64	TRANSISTOR 2SD2216Q
Q306	8-729-220-93	TRANSISTOR 2SK209-G
Q400	8-729-929-26	TRANSISTOR DTC114TE
Q500	8-729-427-72	TRANSISTOR XP4501
Q501	8-729-425-64	TRANSISTOR 2SD2216Q
Q502	8-729-425-50	TRANSISTOR 2SB1462Q
Q503	8-729-425-50	TRANSISTOR 2SB1462Q

4-3. SEMICONDUCTOR

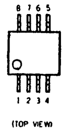
AK6420F



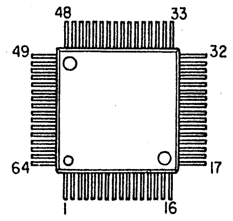
BA3570FS
LB8111V


24
13
1
12
(TOP VIEW)

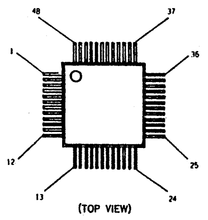
CAT35C202K
CXA1211M
NJM2073M



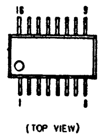
CXA1207AR


48
33
49
32
64
17
1
16

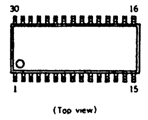
CXA1208R



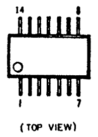
CXA1452N
CXD2107M
MB3775PFV
MC10H116M
XRU4052BF


16
9
1
8
(TOP VIEW)

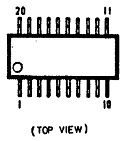
CXA8006M


30
16
1
15
(TOP VIEW)

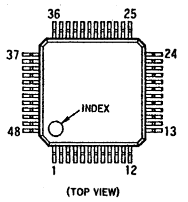
CXL5502M
LA7217M
TL1596CDB


14
8
1
7
(TOP VIEW)

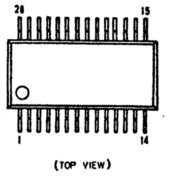
M62352GP
MPC1720M


20
11
1
10
(TOP VIEW)

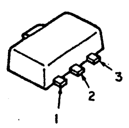
MB3785APFV-G-BND-ER


36
25
37
24
INDEX
48
13
1
12
(TOP VIEW)

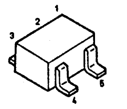
MB90075PF


28
15
1
14
(TOP VIEW)

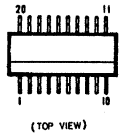
S-8053ALO-LG-S
S-8054ALR-LN-S
S-81350HG-KD



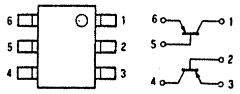
TC4S11F
TC4S66F
TC4S81F



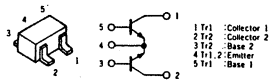
μPD6453GT-622


20
11
1
10
(TOP VIEW)

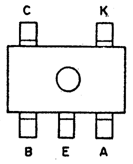
FC149
UMT1



FMG4


1 Tr1 :Collector 1
2 Tr2 :Collector 2
3 Tr2 :Base 2
4 Tr1, 2 :Emitter
5 Tr1 :Base 1

FP102



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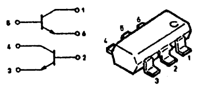

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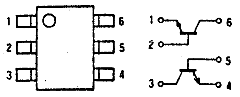

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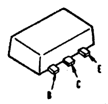

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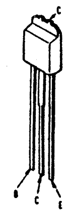

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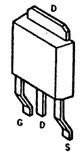

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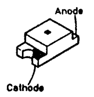
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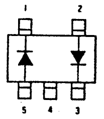
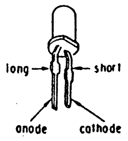
Cathode

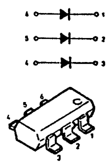
FC806



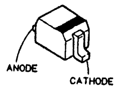
GL-3EG8
TLUR164


long
short
anode
cathode

IMN10



MA8027
MA8091


ANODE
CATHODE

SECTION 5
EXPLODED VIEWS

NOTE:
- -XX, -X mean standardized parts, so they may have some difference from the original one.

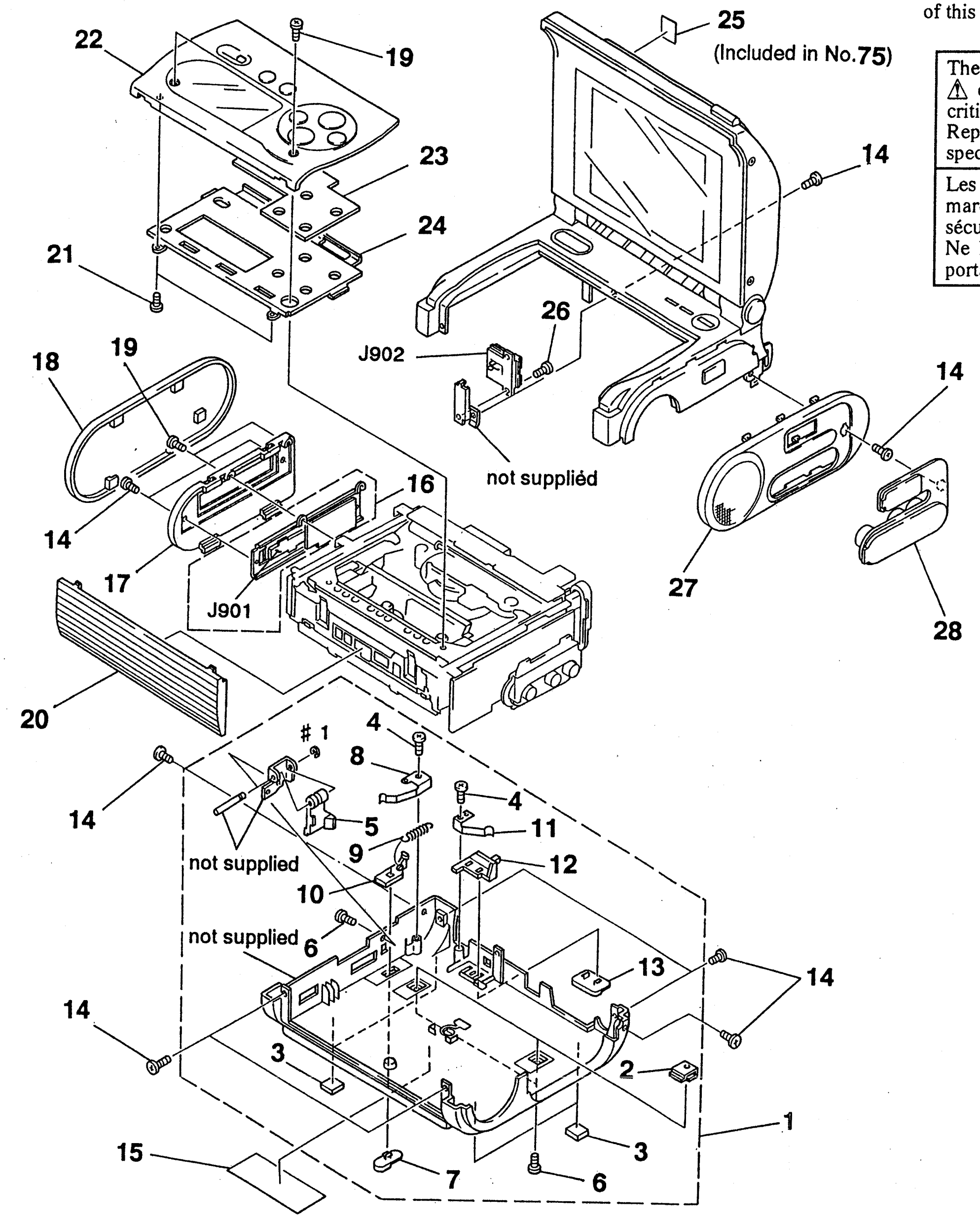
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

5-1. CABINET ASSEMBLY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(Included in No.75)
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J902
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J901
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not supplied
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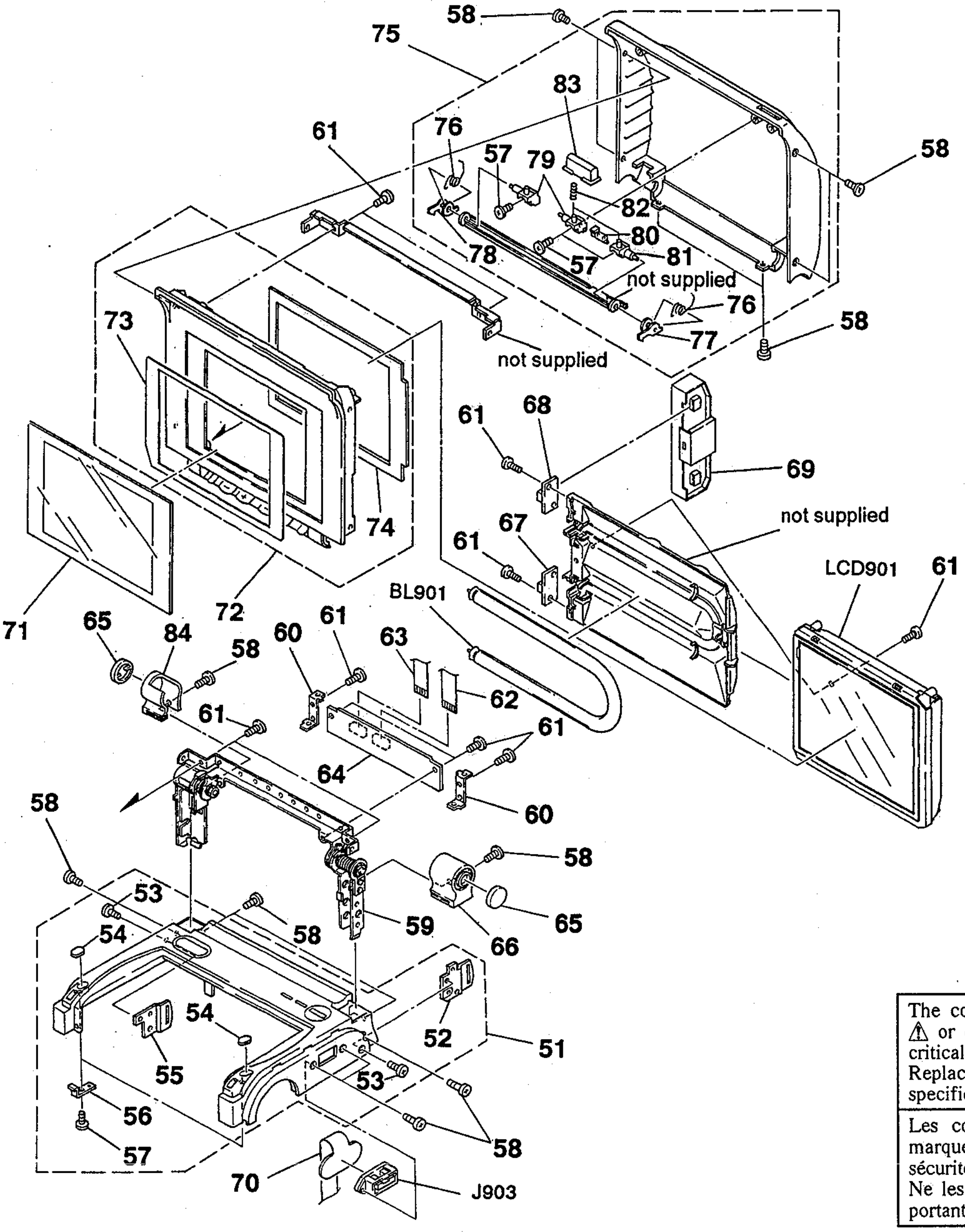
Ref. No.	Part No.	Description	Remark
1	X-3942-026-1	CABINET ASSY, LOWER	
2	3-736-496-01	BRACKET, STAND	
* 3	3-949-383-01	FOOT, RUBBER	
4	3-945-884-01	SCREW (2X5)	
5	3-949-471-01	KNOB, TU LOCK	
6	3-713-786-81	SCREW (M2X2.5)	
7	3-949-465-01	BUTTON, TU RELEASE	
* 8	3-949-472-01	SPRING, TU LOCK	
9	3-949-470-01	SPRING, COIL	
* 10	3-949-473-01	SLIDER, TU	
* 11	3-949-469-01	SPRING, BATT LOCK	
* 12	3-949-468-01	SLIDER, BATT	
13	3-949-467-01	BUTTON, BATT RELEASE	
14	3-719-381-01	SCREW (M2X4)	
* 15	3-949-754-01	LABEL, MODEL NUMBER (U)	
* 16	A-7071-698-A	JK-86 BOARD, COMPLETE	
17	3-949-424-01	RAIL, TU	
18	3-949-425-01	CABINET (L), SIDE	
19	3-733-912-41	SCREW (M2X9), SPECIAL HEAD	
20	X-3941-982-1	LID ASSY, LS	
21	3-713-790-11	SCREW (M2X5), TAPPING, P3	
22	X-3942-029-1	LID ASSY, CASSETTE COMPARTMENT	
* 23	A-7071-699-A	FU-109 (A) BOARD, COMPLETE	
24	X-3942-225-1	BRACKET ASSY, FU	
* 25	3-703-713-41	STICKER, SONY SYMBOL (10)	
26	3-713-786-51	SCREW (M2X3)	
27	X-3942-022-1	CABINET (R) ASSY, SIDE	
28	3-949-422-01	COVER, JACK	
J901	1-537-449-11	TERMINAL BOARD (TUNER/CAMERA)	
J902	1-537-420-21	TERMINAL BOARD (BATTERY)	

5-2. UPPER CABINET AND SC BLOCK ASSEMBLIES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not supplied
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LCD901
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BL901
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J903

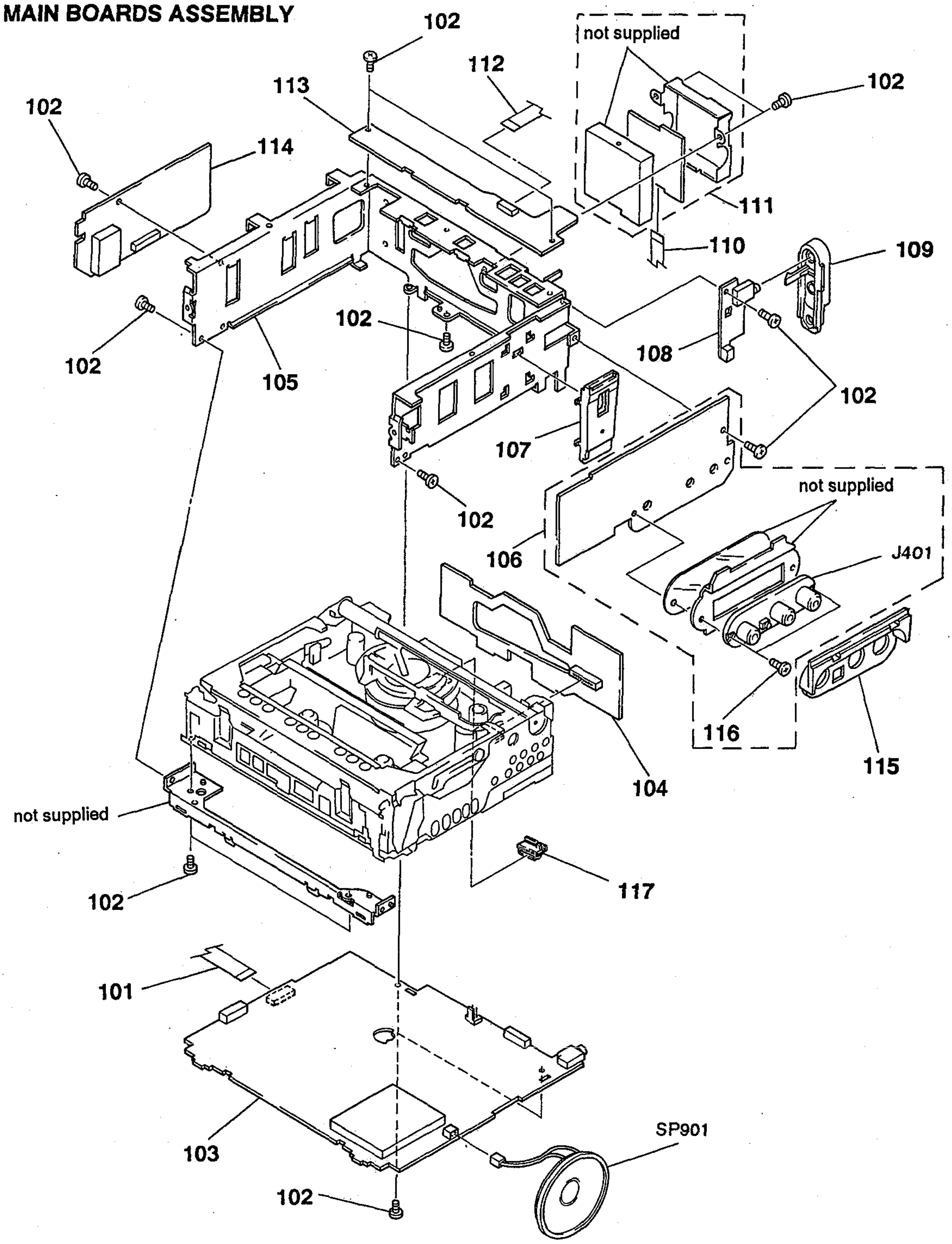
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
51	X-3942-036-1	CABINET ASSY, UPPER	
52	3-949-461-01	BRACKET (R), STRAP	
53	3-713-786-81	SCREW (M2X2.5)	
54	3-949-464-01	CUSHION	
55	3-949-462-01	BRACKET (L), STRAP	
56	3-949-487-01	PLATE, LOCK	
57	3-945-884-01	SCREW (2X5)	
58	3-719-381-01	SCREW (M2X4)	
59	X-3941-986-1	FRAME ASSY, HINGE	
* 60	3-949-409-01	REINFORCEMENT, HINGE	
61	3-713-790-11	SCREW (M2X5), TAPPING, P3	
62	1-645-364-11	FP-563 FLEXIBLE BOARD	
63	1-645-368-11	FP-568 FLEXIBLE BOARD	
* 64	A-7071-700-A	VR-39 (A) BOARD, COMPLETE	
65	3-949-411-01	CAP	
66	3-949-406-01	COVER, R	
* 67	A-7071-714-A	LA-23 BOARD, COMPLETE	
* 68	A-7071-713-A	LA-22 BOARD, COMPLETE	
⚠69	1-466-791-11	INVERTER UNIT, DC/AC (DPS-28)	

Ref. No.	Part No.	Description	Remark
70	1-645-369-11	FP-621 FLEXIBLE BOARD	
71	3-949-413-01	WINDOW, SC	
72	X-3942-035-1	CABINET ASSY, LOWER, SC	
73	3-949-408-01	SHEET, ADHESIVE, SC WINDOW	
74	3-949-414-01	SHEET, DUST PROTECTION	
75	X-3942-034-1	CABINET ASSY, UPPER, SC	
76	3-949-426-01	SPRING, LOCK	
* 77	3-949-415-01	ARM (R), LOCK	
* 78	3-949-419-01	ARM (L), LOCK	
79	3-949-430-01	FULCRUM BLOCK (B)	
80	3-949-428-01	PLATE, SLIDE, LOCK	
81	3-949-427-01	FULCRUM BLOCK (A)	
82	3-944-333-01	SPRING, COMPRESSION	
83	3-949-417-01	BUTTON, RELEASE	
84	3-949-412-01	COVER, L	
BL901	1-517-126-11	FLUORESENT TUBE, HEAT CATHODE	
J903	1-580-009-21	SOCKET, CONNECTOR (SQUARE) 12P (A/V OUT)	
LCD901	1-809-500-11	MODULE, COLOR LIQUID CRYSTAL	

5-3. MAIN BOARDS ASSEMBLY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not supplied
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J401
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not supplied
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SP901
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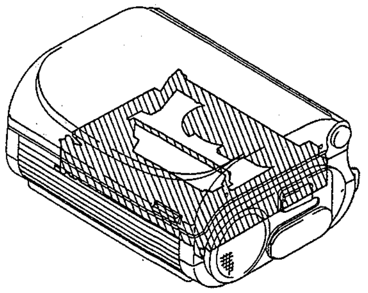
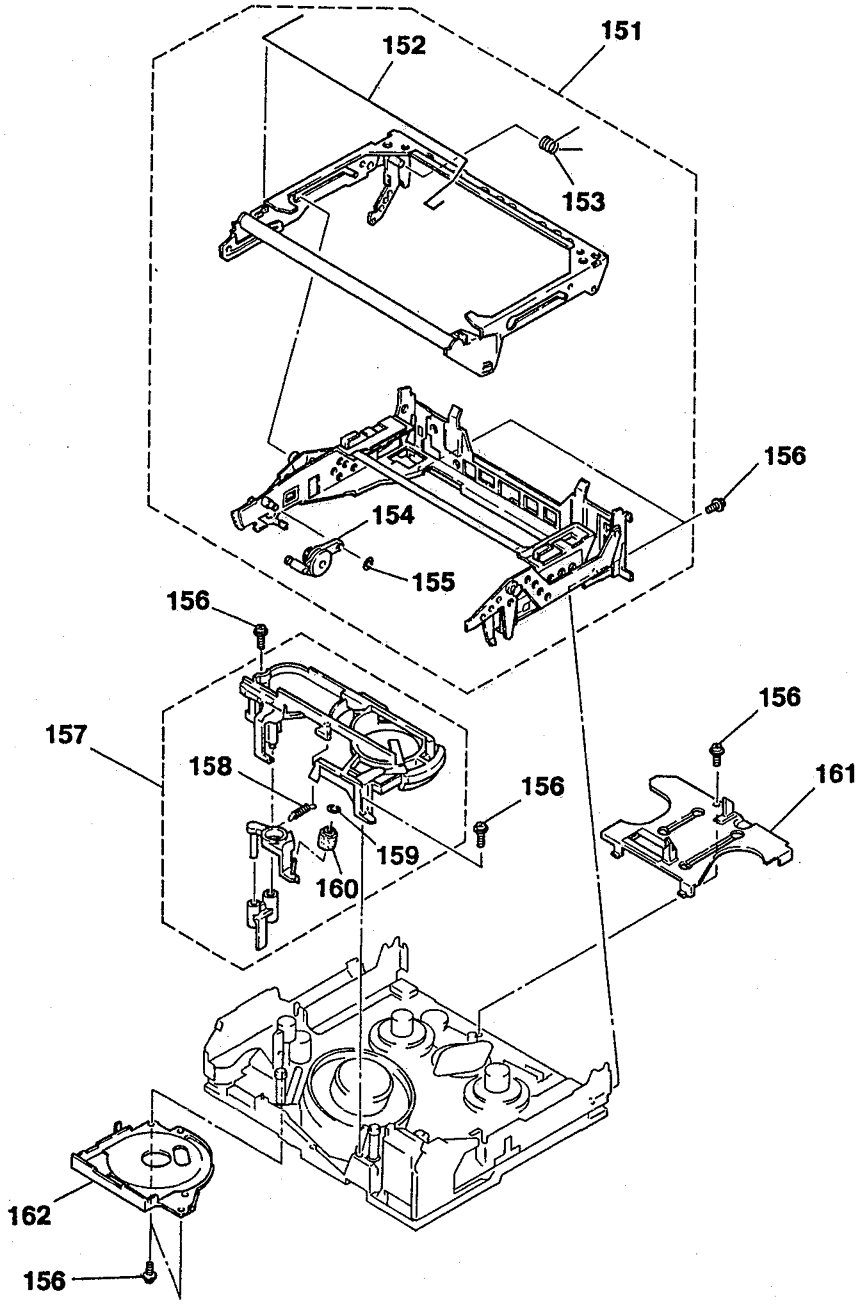
Ref. No.	Part No.	Description	Remark
101	1-645-995-11	FP-629 FLEXIBLE BOARD	
102	3-713-786-51	SCREW (M2X3)	
103	A-7053-386-A	MA-137 (B) BOARD, COMPLETE	
* 104	A-7063-329-A	SL-26 BOARD, COMPLETE	
105	X-3942-265-1	FRAME ASSY	
106	A-7053-385-A	AU-136 (B) BOARD, COMPLETE	
* 107	3-949-443-01	HOLDER, FLEXIBLE	
* 108	A-7071-696-A	HP-84 (A) BOARD, COMPLETE	
109	3-949-407-11	CAP, HP	
110	1-645-367-11	FP-566 FLEXIBLE BOARD	
111	A-7063-328-A	RP-144 BOARD, COMPLETE	
112	1-645-366-11	FP-565 FLEXIBLE BOARD	
* 113	A-7071-697-A	PE-13 BOARD, COMPLETE	
114	A-7053-327-A	RG-25 (A) BOARD, COMPLETE	
115	3-949-442-01	PLATE, JACK	
116	3-719-381-01	SCREW (M2X4)	
117	1-691-471-11	CONNECTOR, TRANSLATION 11P	
J401	1-569-556-11	JACK (VIDEO/AUDIO)	
SP901	1-504-137-11	SPEAKER (3.6CM)	

5-4. CASSETTE COMPARTMENT ASSEMBLY

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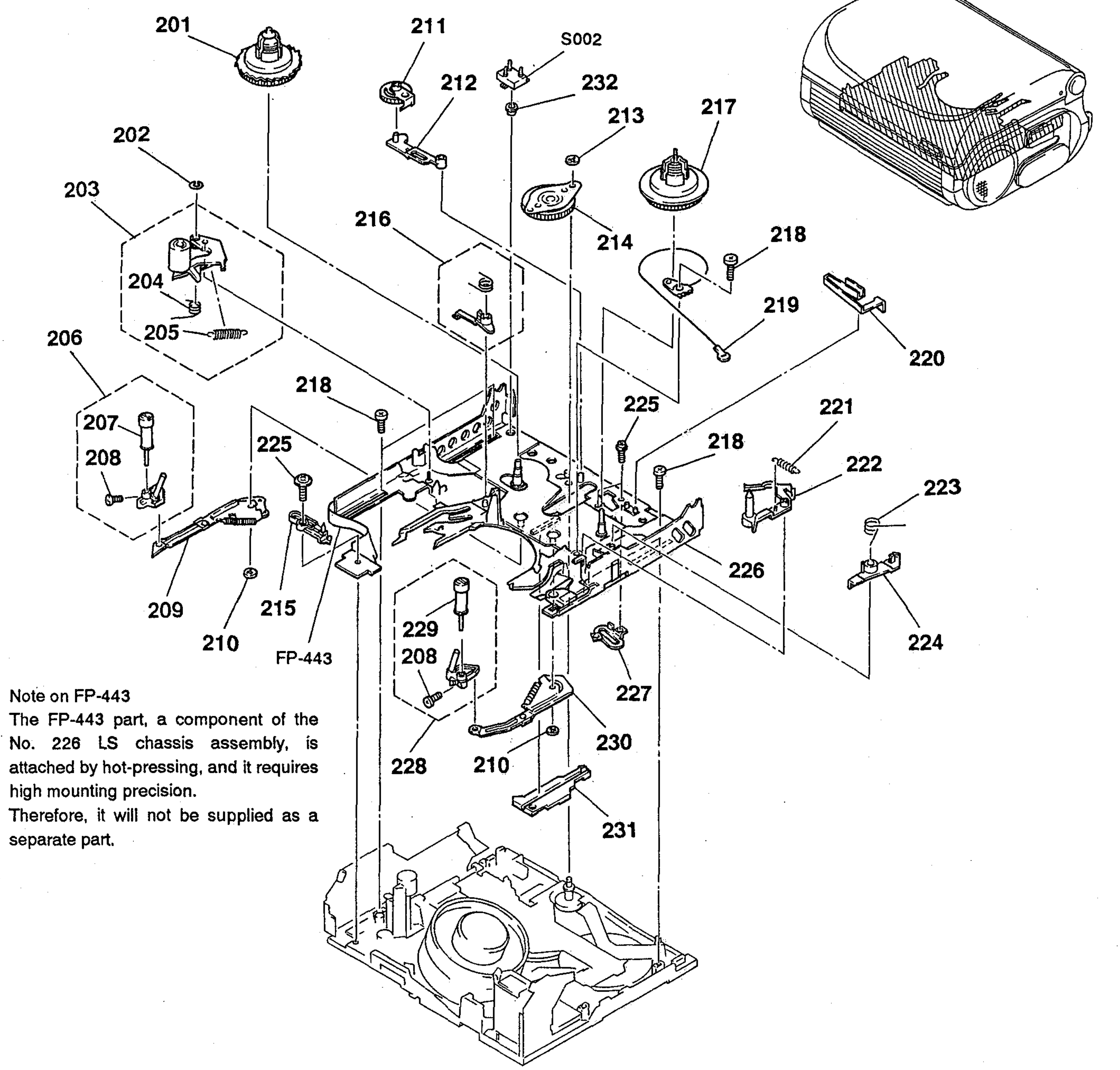
Ref. No.	Part No.	Description	Remark
151	A-7040-312-A	CASSETTE COMPARTMENT BLOCKASSY	
152	3-945-773-01	BAR, TORSION	
153	3-945-771-01	SPRING, TORSION	
154	X-3941-287-2	DAMPER ASSY	
155	3-315-384-31	WASHER, STOPPER	
156	3-947-503-01	SCREW (M1. 4X2. 5)	
157	A-7040-309-A	PROTECT (BASE) BLOCK ASSY	
158	3-945-760-01	SPRING, TENSION	
159	3-321-393-01	WASHER, STOPPER	
160	X-3726-817-3	ROLLER ASSY, HC	
161	X-3941-280-1	RETAINER ASSY, GOOSENECK	
162	3-945-733-01	COVER, CAPSTAN	

5-5. LS CHASSIS ASSEMBLY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FP-443
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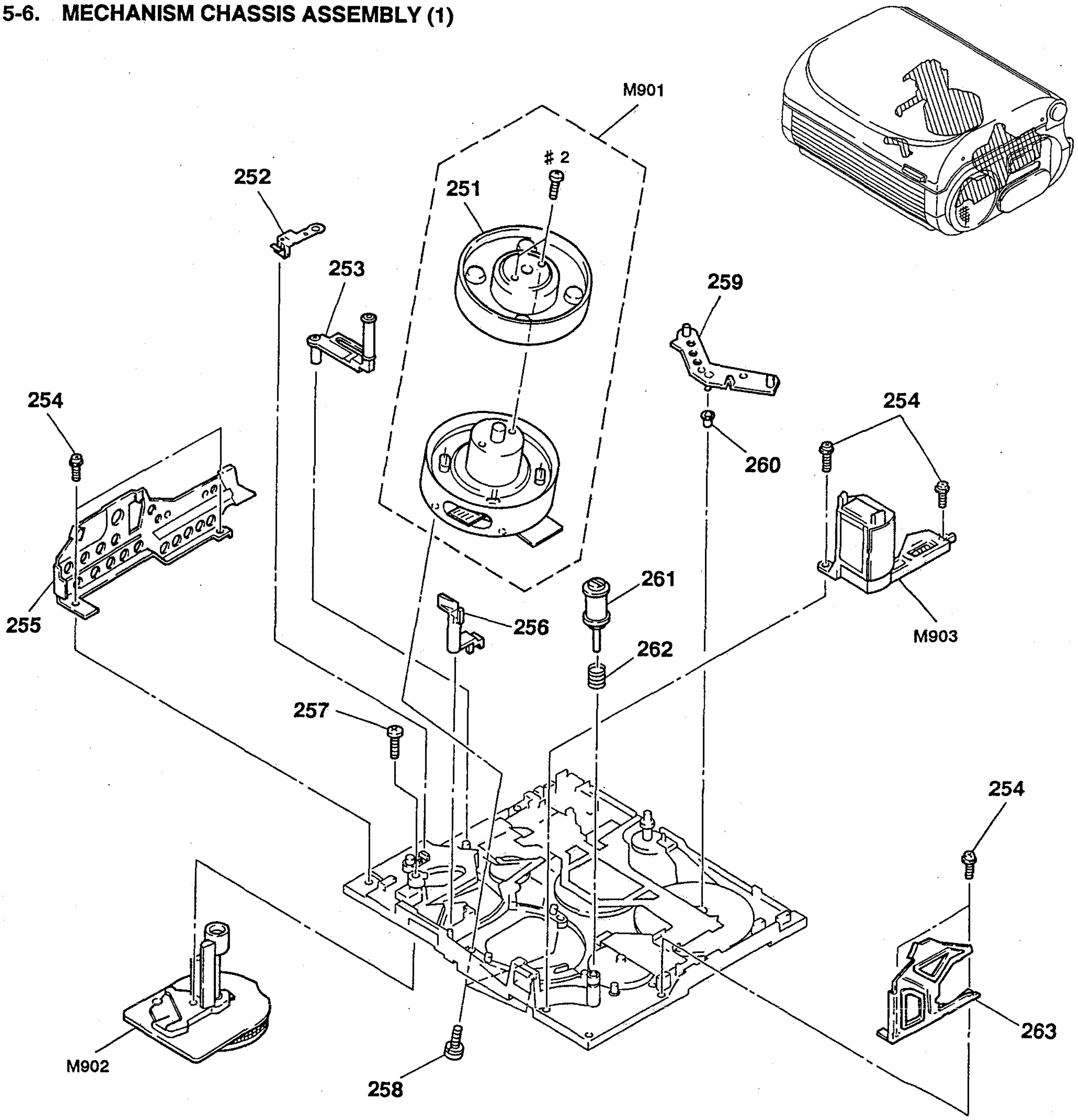
Note on FP-443
The FP-443 part, a component of the No. 226 LS chassis assembly, is attached by hot-pressing, and it requires high mounting precision.
Therefore, it will not be supplied as a separate part.

Ref. No.	Part No.	Description	Remark
201	X-3941-274-1	TABLE ASSY, REEL, T	
202	3-331-007-21	WASHER	
203	X-3941-271-1	ARM ASSY, PINCH	
204	3-945-743-01	SPRING, TORSION	
205	3-945-783-01	SPRING, TENSION	
206	A-7040-322-A	GUIDE (BASE) (T) BLOCK ASSY (2)	
207	X-3941-756-1	ROLLER ASSY (2), TG6	
208	3-947-504-01	SCREW (M1.2X2)	
209	X-3941-267-1	ARM (T) ASSY, GUIDE	
210	3-669-465-00	WASHER (1.5) STOPPER	
211	X-3941-273-1	SOFT ASSY, T	
212	3-945-753-01	ARM, T SOFT	
213	3-726-829-01	WASHER, STOPPER	
214	X-3941-279-1	GEAR ASSY, GOOSENECK	
215	3-947-644-01	RETAINER, TG5 (BASE)	
216	A-7040-321-A	CLAW BLOCK ASSY, T HARD	
217	X-3941-275-1	TABLE ASSY, REEL, S	
218	3-945-756-01	SCREW (M1.4X3)	
219	X-3941-277-1	STRING BLOCK ASSY	
220	3-945-801-01	BRAKE, S SOFT	
221	3-948-810-01	SPRING, TENSION	
222	X-3941-276-1	TG1 ASSY	
223	3-945-752-01	SPRING, TORSION	
224	3-945-799-01	BRAKE, S HARD	
225	3-947-503-01	SCREW (M1.4X2.5)	
226	X-3941-265-1	CHASSIS ASSY, LS	
227	3-945-784-01	PLATE, CAM, LS	
228	A-7040-323-A	GUIDE (BASE) (S) BLOCK ASSY (2)	
229	X-3941-755-1	ROLLER ASSY (2), TG3	
230	X-3941-266-1	ARM (S) ASSY, GUIDE	
231	3-945-837-01	SLIDER, GL	
232	3-949-881-01	SLEEVE	
S002	1-572-987-11	SWITCH, PUSH (3 KEY) (REC PROOF, ME/MP, MP/MP-HG)	

5-6. MECHANISM CHASSIS ASSEMBLY (1)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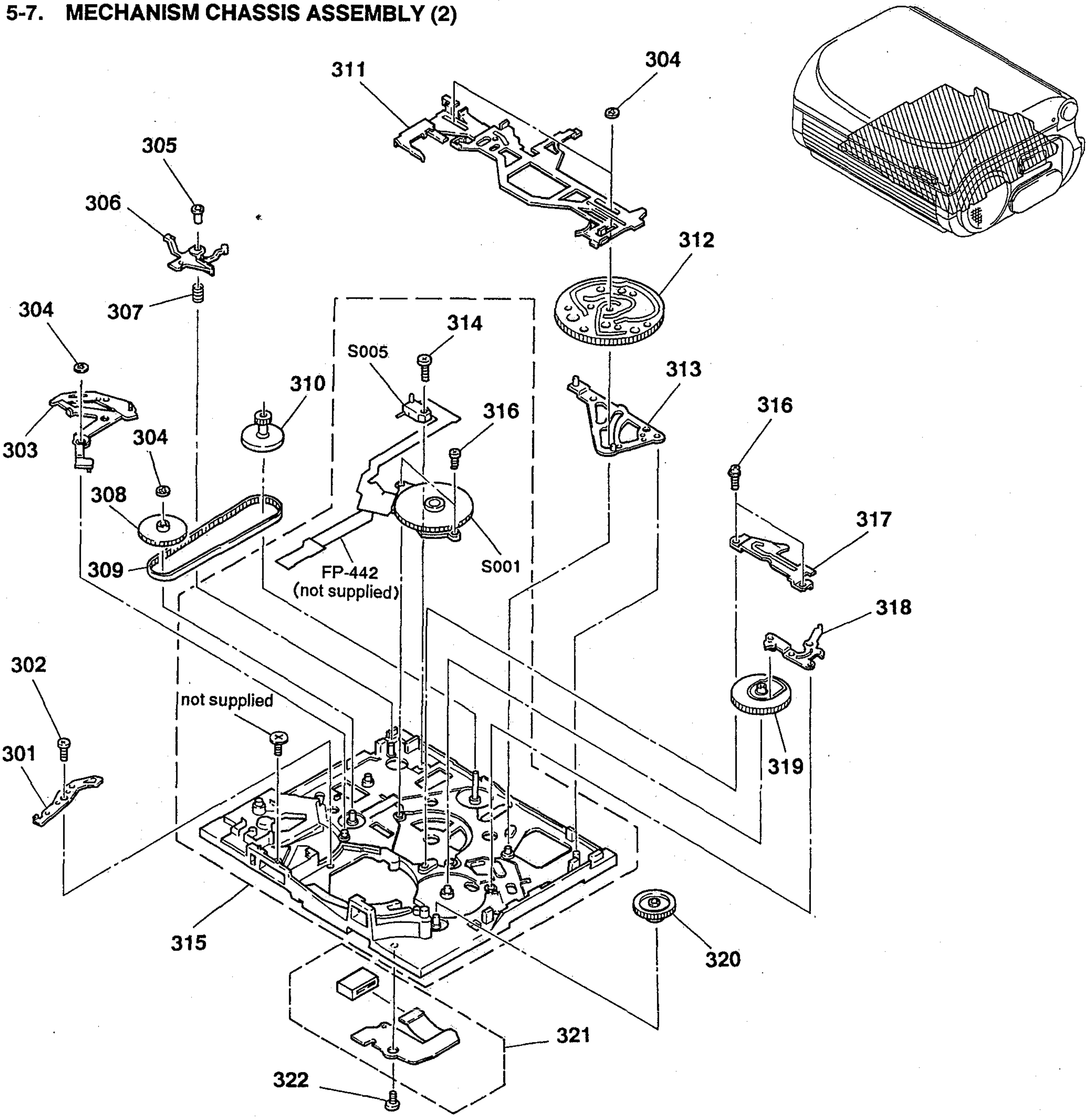
Ref. No.	Part No.	Description	Remark
251	A-7049-568-A	DRUM ASSY, UPPER (DGR-93-R)	
252	3-945-822-01	SPRING, LEAF, TG7 ARM	
253	A-7040-305-A	ARM BLOCK ASSY, TG7	
254	3-947-503-01	SCREW (M1.4X2.5)	
255	X-3941-255-1	PLATE (T) ASSY, SIDE	
256	3-945-735-01	ARM, HC CONVERSION	
257	3-713-786-71	SCREW (M2X5)	
258	3-686-493-01	SCREW (M2X5), P1	
259	3-945-701-01	ARM, LS	
260	3-945-702-01	ROLLER, LS	
261	X-3941-193-1	ROLLER ASSY (2), TG2	
262	3-945-774-01	SPRING, COMPRESSION	
263	3-945-691-01	PLATE (S), SIDE	
M901	A-7048-635-A	DRUM ASSY (DGH-93A-R)	
M902	8-835-492-01	MOTOR, DC SCE-0102A (CAPSTAN)	
M903	A-7040-304-A	MOTOR BLOCK ASSY, LM (LOADING)	

5-7. MECHANISM CHASSIS ASSEMBLY (2)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FP-442
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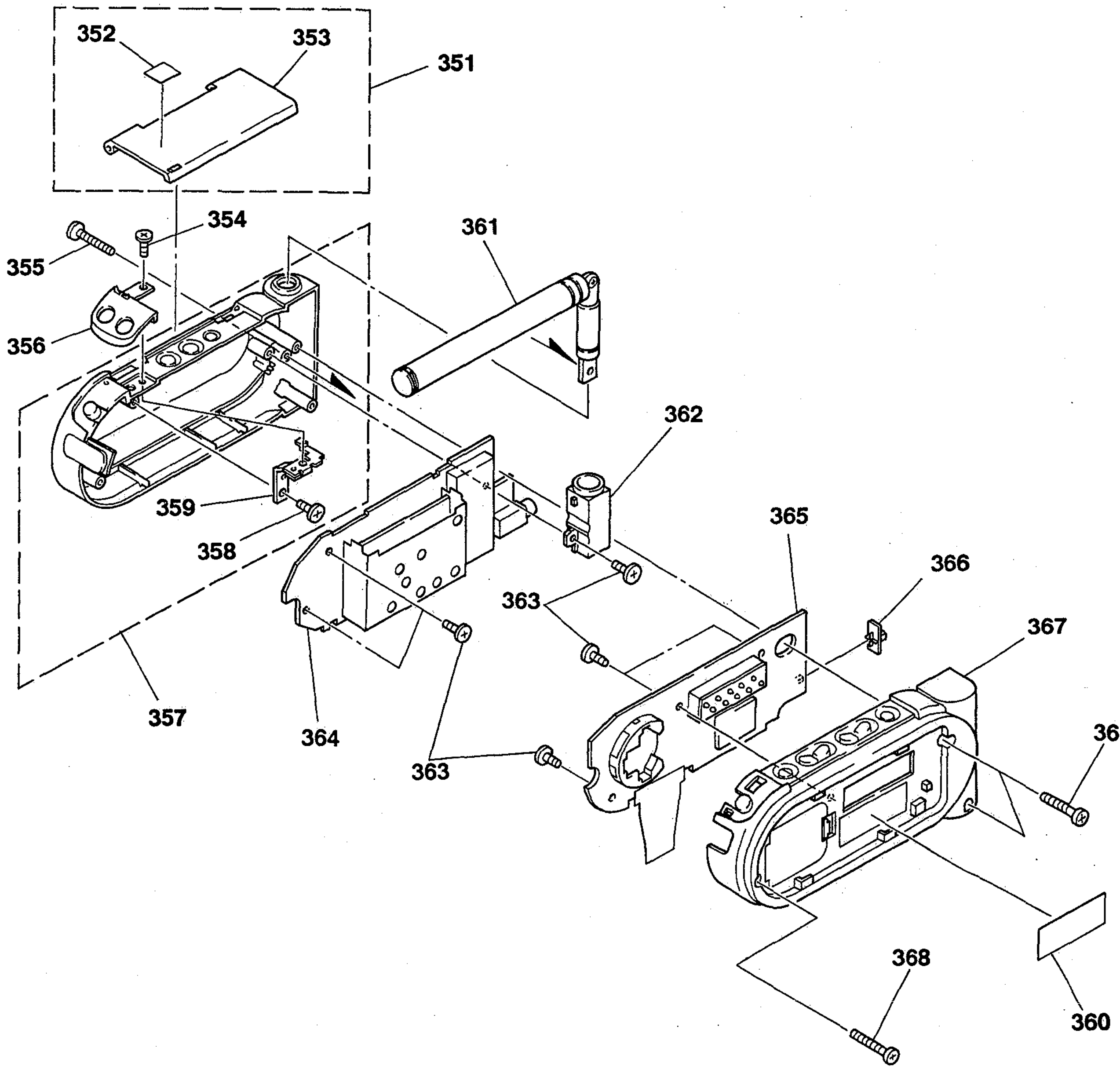
Ref. No.	Part No.	Description	Remark
301	3-945-734-01	ARM, HC DRIVING	
302	3-728-103-11	SCREW (M1.4X1.6), SPECIAL HEAD	
303	X-3941-259-1	ARM ASSY, PINCH PRESS	
304	3-726-829-01	WASHER, STOPPER	
305	3-945-730-01	SLEEVE, EJECT	
306	3-945-706-01	LEVER, EJECT	
307	3-945-729-01	SPRING, COMPRESSION	
308	X-3941-256-1	GEAR ASSY, CHANGE	
309	3-944-539-01	BELT, RELAY	
310	3-945-695-01	PULLEY, RELAY	
311	X-3941-260-1	SLIDER ASSY, M	
312	3-945-696-01	CAM	

Ref. No.	Part No.	Description	Remark
313	X-3941-258-1	ARM ASSY, GL	
314	3-713-786-71	SCREW (M2X5)	
315	A-7040-303-A	CHASSIS ASSY, MECHANICAL	
316	3-947-503-01	SCREW (M1.4X2.5)	
317	3-945-722-01	RETAINER, GEAR	
318	X-3941-257-1	ARM ASSY, FF	
319	3-945-697-01	GEAR (B), L	
320	3-945-700-01	GEAR (A), L	
321	A-7040-311-A	FP-444 ASSY	
322	3-945-756-01	SCREW (M1.4X3)	
S001	1-572-986-11	SWITCH, ROTARY (ENCODER)	
S005	1-570-771-21	SWITCH (C DOWN)	

5-8. TUNER/TIMER UNIT ASSEMBLY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Ref. No.	Part No.	Description	Remark
351	X-3942-226-1	DOOR ASSY, BUTTON	
* 352	3-703-713-41	STICKER, SONY SYMBOL (10)	
353	3-949-503-01	DOOR, BUTTON	
354	3-719-381-01	SCREW (M2X4)	
355	3-740-546-01	SCREW (M2X10)	
356	X-3942-048-1	PANEL ASSY, FRONT	
357	X-3942-047-1	CABINET (L) ASSY	
358	3-713-786-21	SCREW (M2X3)	
359	X-3942-163-1	NUT ASSY, PLATE	
* 360	3-949-752-01	LABEL, MODEL NUMBER	
361	1-501-456-11	ANTENNA, TELESCOPIC	
* 362	3-949-513-01	HOLDER, ANTENNA	
363	3-713-790-11	SCREW (M2X5), TAPPING, P3	
364	A-7063-380-A	TU-142 (B) BOARD, COMPLETE	
365	A-7063-381-A	TM-118 (B) BOARD, COMPLETE	
366	3-949-512-01	BUTTON, INPUT SELECTION	
367	X-3942-046-1	CABINET (R) ASSY	
368	3-713-790-31	SCREW (M2X8), TAPPING, P3	

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F : nonflammable
- Hardware (# mark) list is given in the last of this parts list.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: μ, for example:
  uA...: μA..., uPA...: μPA...,
  uPB...: μPB..., uPC...: μPC...,
  uPD...: μPD...
- CAPACITORS
  uF : μF
- COILS
  uH : μH

Ref. No.	Part No.	Description			Remark
*	A-7053-385-A	AU-136 BOARD, COMPLETE **********************			
	3-719-381-01	SCREW (M2X4)			
		(CAPACITOR)			
C052	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C053	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C054	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C055	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C056	1-135-145-11	TANTALUM CHIP	0.47uF	10%	35V
C057	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C058	1-128-004-11	ELECT CHIP	10uF	20%	16V
C059	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C060	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C061	1-128-003-11	ELECT CHIP	22uF	20%	4V
C062	1-164-346-11	CERAMIC CHIP	1uF		16V
C063	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C064	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C065	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C066	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C067	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C068	1-135-156-21	TANTALUM CHIP	6.8uF	10%	10V
C069	1-128-004-11	ELECT CHIP	10uF	20%	16V
C070	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C071	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C072	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C073	1-164-346-11	CERAMIC CHIP	1uF		16V
C074	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C401	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C404	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C405	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C406	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C407	1-162-971-11	CERAMIC CHIP	0.001uF		50V
C410	1-164-361-11	CERAMIC CHIP	0.047uF		16V
C411	1-164-361-11	CERAMIC CHIP	0.047uF		16V
C412	1-128-003-11	ELECT CHIP	22uF	20%	4V
C413	1-128-003-11	ELECT CHIP	22uF	20%	4V
C414	1-128-003-11	ELECT CHIP	22uF	20%	4V
C415	1-128-003-11	ELECT CHIP	22uF	20%	4V
C416	1-164-633-11	CERAMIC CHIP	0.1uF	10%	25V
C420	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C421	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C422	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V
C423	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C424	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C425	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C426	1-126-607-11	ELECT CHIP	47uF	20%	4V
C427	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C428	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C429	1-135-259-11	TANTALUM CHIP	10uF	20%	6.3V
C430	1-126-207-11	ELECT CHIP	33uF	20%	4V
C431	1-126-607-11	ELECT CHIP	47uF	20%	4V
C432	1-126-607-11	ELECT CHIP	47uF	20%	4V
C433	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C434	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C435	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C436	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C437	1-126-607-11	ELECT CHIP	47uF	20%	4V
C438	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C439	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C440	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C441	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V
C442	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C443	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C444	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C445	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C446	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C447	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C448	1-135-145-11	TANTALUM CHIP	0.47uF	10%	35V
C449	1-135-145-11	TANTALUM CHIP	0.47uF	10%	35V
C450	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C451	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C452	1-162-959-11	CERAMIC CHIP	330PF	5%	50V
C453	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C454	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C455	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C456	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C470	1-164-346-11	CERAMIC CHIP	1uF		16V
C471	1-164-346-11	CERAMIC CHIP	1uF		16V
C472	1-164-346-11	CERAMIC CHIP	1uF		16V
C473	1-164-346-11	CERAMIC CHIP	1uF		16V
C477	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C478	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C479	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C488	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C489	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V

Ref. No.	Part No.	Description	Remark
C491	1-164-346-11	CERAMIC CHIP 1uF 16V	
C492	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C493	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C494	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C495	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C496	1-135-211-11	TANTAL. CHIP 6.8uF 20% 6.3V	
C497	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C498	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C501	1-164-346-11	CERAMIC CHIP 1uF 16V	
C502	1-135-210-11	TANTALUM CHIP 4.7uF 20% 10V	
C503	1-135-210-11	TANTALUM CHIP 4.7uF 20% 10V	
C504	1-164-346-11	CERAMIC CHIP 1uF 16V	
C510	1-164-346-11	CERAMIC CHIP 1uF 16V	
C511	1-135-210-11	TANTALUM CHIP 4.7uF 20% 10V	
C512	1-135-210-11	TANTALUM CHIP 4.7uF 20% 10V	
C513	1-164-346-11	CERAMIC CHIP 1uF 16V	
C530	1-164-346-11	CERAMIC CHIP 1uF 16V	
C531	1-164-346-11	CERAMIC CHIP 1uF 16V	
C532	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C533	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C541	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C542	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C543	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C544	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C545	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C546	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C547	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C548	1-162-969-11	CERAMIC CHIP 0.0068uF 10% 25V	
C549	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C570	1-128-007-11	ELECT CHIP 2.2uF 20% 35V	
C571	1-126-205-11	ELECT CHIP 47uF 20% 6.3V	
C580	1-164-346-11	CERAMIC CHIP 1uF 16V	
C581	1-135-181-21	TANTALUM CHIP 4.7uF 20% 6.3V	
C582	1-135-181-21	TANTALUM CHIP 4.7uF 20% 6.3V	
C583	1-126-205-11	ELECT CHIP 47uF 20% 6.3V	
C591	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C592	1-163-058-00	CERAMIC CHIP 0.0082uF 10% 50V	
C593	1-135-259-11	TANTALUM CHIP 10uF 20% 6.3V	
		(DIODE)	
D054	8-719-989-03	DIODE DAN222	
D055	8-719-989-03	DIODE DAN222	
D401	8-719-989-03	DIODE DAN222	
D402	8-719-989-00	DIODE DA221	
D403	8-719-420-81	DIODE MA3075WA	
D404	8-719-420-81	DIODE MA3075WA	
D405	8-719-420-81	DIODE MA3075WA	
		(FILTER)	
FL401	1-236-838-21	FILTER, BAND PASS	

Ref. No.	Part No.	Description	Remark
FL402	1-236-837-21	FILTER, BAND PASS	
		(IC)	
IC041	8-759-510-56	IC BA3570FS	
IC042	8-759-701-02	IC NJM2073M	
IC043	8-759-234-77	IC TC4S66F	
IC401	8-759-077-12	IC CXA1542R	
IC402	8-752-334-42	IC CXD2106Q	
IC403	8-752-053-21	IC CXA1211M	
IC404	8-759-108-09	IC uPD4012BG	
IC406	8-759-108-09	IC uPD4012BG	
		(JACK)	
J401	1-569-556-11	JACK (VIDEO, AUDIO)	
		(COIL)	
L052	1-412-031-11	INDUCTOR CHIP 47uH	
L401	1-412-031-11	INDUCTOR CHIP 47uH	
L402	1-412-029-11	INDUCTOR CHIP 10uH	
		(LINK, IC)	
⚠PS401	1-576-124-21	LINK, IC CCP2E25 (1A)	
⚠PS402	1-576-124-21	LINK, IC CCP2E25 (1A)	
		(TRANSISTOR)	
Q051	8-729-928-81	TRANSISTOR DTC144EE	
Q052	8-729-202-38	TRANSISTOR 2SC3326N-A	
Q053	8-729-202-38	TRANSISTOR 2SC3326N-A	
Q054	8-729-928-87	TRANSISTOR DTC124EE	
Q055	8-729-927-62	TRANSISTOR UMX1	
Q056	8-729-928-81	TRANSISTOR DTC144EE	
Q057	8-729-141-48	TRANSISTOR 2SB624-BV345	
Q401	8-729-927-62	TRANSISTOR UMX1	
Q402	8-729-927-XX	TRANSISTOR 2SC4617R	
Q404	8-729-927-XX	TRANSISTOR 2SC4617R	
Q405	8-729-927-XX	TRANSISTOR 2SC4617R	
Q406	8-729-930-13	TRANSISTOR UMH2	
Q408	8-729-927-XX	TRANSISTOR 2SC4617R	
Q409	8-729-927-XX	TRANSISTOR 2SC4617R	
Q410	8-729-927-62	TRANSISTOR UMX1	
Q411	8-729-927-XX	TRANSISTOR 2SC4617R	
Q412	8-729-928-81	TRANSISTOR DTC144EE	
Q413	8-729-927-62	TRANSISTOR UMX1	
Q414	8-729-927-XX	TRANSISTOR 2SC4617R	
Q415	8-729-928-19	TRANSISTOR 2SA1774R	
Q416	8-729-928-81	TRANSISTOR DTC144EE	
Q417	8-729-928-19	TRANSISTOR 2SA1774R	
Q418	8-729-927-XX	TRANSISTOR 2SC4617R	
Q419	8-729-141-48	TRANSISTOR 2SB624-BV345	
Q422	8-729-928-19	TRANSISTOR 2SA1774R	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

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Ref. No.	Part No.	Description				Remark
Q423	8-729-927-XX	TRANSISTOR 2SC4617R				
Q424	8-729-927-XX	TRANSISTOR 2SC4617R				
Q425	8-729-903-10	TRANSISTOR FMW1				
Q426	8-729-927-XX	TRANSISTOR 2SC4617R				
Q427	8-729-928-19	TRANSISTOR 2SA1774R				
Q428	8-729-928-81	TRANSISTOR DTC144EE				
Q501	8-729-927-XX	TRANSISTOR 2SC4617R				
Q502	8-729-927-XX	TRANSISTOR 2SC4617R				
Q591	8-729-927-XX	TRANSISTOR 2SC4617R				
Q592	8-729-927-XX	TRANSISTOR 2SC4617R				
Q593	8-729-928-90	TRANSISTOR DTC114EE				
Q594	8-729-928-81	TRANSISTOR DTC144EE				
		〈 RESISTOR 〉				
R051	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R052	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R053	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R054	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R055	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R056	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R057	1-216-857-11	METAL CHIP	1M	5%	1/16W	
R058	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R059	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R061	1-216-015-00	METAL CHIP	39	5%	1/10W	
R062	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R063	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R064	1-216-015-00	METAL CHIP	39	5%	1/10W	
R065	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R067	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R068	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R069	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R070	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R071	1-216-815-11	METAL CHIP	330	5%	1/16W	
R072	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R073	1-216-789-11	METAL CHIP	2.2	5%	1/16W	
R074	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R075	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R076	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R077	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R085	1-216-013-00	METAL CHIP	33	5%	1/10W	
R086	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R087	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R089	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R090	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R401	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R402	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R403	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R404	1-216-848-11	METAL CHIP	180K	5%	1/16W	
R405	1-216-848-11	METAL CHIP	180K	5%	1/16W	
R406	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	

Ref. No.	Part No.	Description				Remark
R408	1-216-864-11	METAL CHIP	0	5%	1/16W	
R410	1-216-864-11	METAL CHIP	0	5%	1/16W	
R411	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R412	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R413	1-216-834-11	METAL CHIP	12K	5%	1/16W	
R414	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R415	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R416	1-216-834-11	METAL CHIP	12K	5%	1/16W	
R417	1-216-864-11	METAL CHIP	0	5%	1/16W	
R418	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R420	1-216-816-11	METAL CHIP	390	5%	1/16W	
R421	1-216-811-11	METAL CHIP	150	5%	1/16W	
R423	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R425	1-218-740-11	METAL CHIP	100K	0.50%	1/16W	
R427	1-218-740-11	METAL CHIP	100K	0.50%	1/16W	
R430	1-216-836-11	METAL CHIP	18K	5%	1/16W	
R431	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R432	1-216-830-11	METAL CHIP	5.6K	5%	1/16W	
R433	1-216-857-11	METAL CHIP	1M	5%	1/16W	
R434	1-216-834-11	METAL CHIP	12K	5%	1/16W	
R435	1-216-830-11	METAL CHIP	5.6K	5%	1/16W	
R436	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R437	1-216-836-11	METAL CHIP	18K	5%	1/16W	
R438	1-216-795-11	METAL CHIP	6.8K	0.50%	1/16W	
R439	1-216-295-00	METAL CHIP	0	5%	1/10W	
R440	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R441	1-216-864-11	METAL CHIP	0	5%	1/16W	
R442	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R443	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R444	1-216-864-11	METAL CHIP	0	5%	1/16W	
R445	1-218-740-11	METAL CHIP	100K	0.50%	1/16W	
R446	1-218-714-11	METAL CHIP	8.2K	0.50%	1/16W	
R449	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R450	1-216-835-11	METAL CHIP	15K	5%	1/16W	
R451	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R452	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R453	1-216-830-11	METAL CHIP	5.6K	5%	1/16W	
R454	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R455	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R456	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R457	1-216-828-11	METAL CHIP	3.9K	5%	1/16W	
R458	1-216-826-11	METAL CHIP	2.7K	5%	1/16W	
R459	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R460	1-216-818-11	METAL CHIP	560	5%	1/16W	
R461	1-216-818-11	METAL CHIP	560	5%	1/16W	
R462	1-216-818-11	METAL CHIP	560	5%	1/16W	
R463	1-216-818-11	METAL CHIP	560	5%	1/16W	
R471	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R472	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R473	1-216-838-11	METAL CHIP	27K	5%	1/16W	

Ref. No.	Part No.	Description				Remark
R474	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R475	1-218-740-11	METAL CHIP	100K	0.50%	1/16W	
R476	1-216-295-00	METAL CHIP	0	5%	1/10W	
R477	1-216-013-00	METAL CHIP	33	5%	1/10W	
R478	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R479	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R501	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R502	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R505	1-216-842-11	METAL CHIP	56K	5%	1/16W	
R506	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R507	1-216-810-11	METAL CHIP	120	5%	1/16W	
R508	1-216-818-11	METAL CHIP	560	5%	1/16W	
R509	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R515	1-216-842-11	METAL CHIP	56K	5%	1/16W	
R516	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R517	1-216-810-11	METAL CHIP	120	5%	1/16W	
R518	1-216-818-11	METAL CHIP	560	5%	1/16W	
R519	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R520	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R521	1-216-849-11	METAL CHIP	220K	5%	1/16W	
R530	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R531	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R532	1-216-857-11	METAL CHIP	1M	5%	1/16W	
R533	1-216-849-11	METAL CHIP	220K	5%	1/16W	
R534	1-216-861-11	METAL CHIP	2.2M	5%	1/16W	
R535	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R536	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R537	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R541	1-216-823-11	METAL CHIP	1.5K	5%	1/16W	
R542	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R543	1-216-836-11	METAL CHIP	18K	5%	1/16W	
R544	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R545	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R546	1-216-823-11	METAL CHIP	1.5K	5%	1/16W	
R547	1-216-823-11	METAL CHIP	1.5K	5%	1/16W	
R548	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R549	1-216-826-11	METAL CHIP	2.7K	5%	1/16W	
R551	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R552	1-216-836-11	METAL CHIP	18K	5%	1/16W	
R553	1-216-823-11	METAL CHIP	1.5K	5%	1/16W	
R554	1-216-816-11	METAL CHIP	390	5%	1/16W	
R555	1-216-823-11	METAL CHIP	1.5K	5%	1/16W	
R556	1-216-823-11	METAL CHIP	1.5K	5%	1/16W	
R557	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R558	1-216-836-11	METAL CHIP	18K	5%	1/16W	
R559	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R560	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R561	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R562	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R563	1-216-864-11	METAL CHIP	0	5%	1/16W	

Ref. No.	Part No.	Description				Remark
R564	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R569	1-216-864-11	METAL CHIP	0	5%	1/16W	
R572	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R573	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R574	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R575	1-216-848-11	METAL CHIP	180K	5%	1/16W	
R577	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R578	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R579	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R580	1-216-836-11	METAL CHIP	18K	5%	1/16W	
R581	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R582	1-216-830-11	METAL CHIP	5.6K	5%	1/16W	
R583	1-216-304-11	METAL CHIP	3.3	5%	1/10W	
R584	1-216-847-11	METAL CHIP	150K	5%	1/16W	
R585	1-216-847-11	METAL CHIP	150K	5%	1/16W	
R586	1-216-838-11	METAL CHIP	27K	5%	1/16W	
R587	1-216-838-11	METAL CHIP	27K	5%	1/16W	
R588	1-216-864-11	METAL CHIP	0	5%	1/16W	
R589	1-216-864-11	METAL CHIP	0	5%	1/16W	
R590	1-216-816-11	METAL CHIP	390	5%	1/16W	
R591	1-216-816-11	METAL CHIP	390	5%	1/16W	
R591-2	1-216-296-00	METAL CHIP	0	5%	1/8W	
R592	1-216-824-11	METAL CHIP	1.8K	5%	1/16W	
R593	1-216-824-11	METAL CHIP	1.8K	5%	1/16W	
R594	1-216-864-11	METAL CHIP	0	5%	1/16W	
R596	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R597	1-216-840-11	METAL CHIP	39K	5%	1/16W	
R598	1-216-835-11	METAL CHIP	15K	5%	1/16W	
R599	1-216-832-11	METAL CHIP	8.2K	5%	1/16W	

〈 NETWORK, RES 〉

Ref. No.	Part No.	Description
RB501	1-236-436-11	NETWORK, RES 100K
RB502	1-236-436-11	NETWORK, RES 100K
RB503	1-236-436-11	NETWORK, RES 100K
RB504	1-236-436-11	NETWORK, RES 100K
RB505	1-236-432-11	NETWORK, RES 47K

〈 FLEXIBLE BOARD 〉

Ref. No.	Part No.	Description
W001	1-645-362-11	FP-561 FLEXIBLE BOARD

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1-645-369-11 FP-621 FLEXIBLE BOARD

****

〈 JACK 〉

Ref. No.	Part No.	Description
J903	1-580-009-21	SOCKET, CONNECTOR (SQUARE) 12P

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FU-109 HP-84 JK-86 LA-22 LA-23 MA-137

Ref. No.	Part No.	Description	Remark
*	A-7071-699-A	FU-109 BOARD, COMPLETE **********************	
		(CAPACITOR)	
C301	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C302	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
		(CONNECTOR)	
CN301	1-573-916-21	CONNECTOR, FFC/FPC (ZIF) 7P	
		(DIODE)	
D301	8-719-951-20	LED BR1102W	
D302	8-719-422-91	DIODE MA8091	
		(RESISTOR)	
R301	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R302	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R303	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	
R304	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R305	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R306	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
		(SWITCH)	
S301	1-572-467-11	SWITCH, PUSH (1 KEY) (REC)	
S302	1-572-921-11	SWITCH, KEY BOARD (STOP)	
S303	1-572-921-11	SWITCH, KEY BOARD (FF)	
S304	1-572-921-11	SWITCH, KEY BOARD (PLAY)	
S305	1-572-921-11	SWITCH, KEY BOARD (SLOW)	
S306	1-572-921-11	SWITCH, KEY BOARD (STILL)	
S307	1-572-921-11	SWITCH, KEY BOARD (REW)	
**			
*	A-7071-696-A	HP-84 BOARD, COMPLETE *********************	
		(CONNECTOR)	
CN601	1-573-331-21	CONNECTOR, BOARD TO BOARD 6P	
		(DIODE)	
D601	8-719-420-87	DIODE MA8130	
		(JACK)	
J601	1-695-514-21	JACK (SMALL TYPE) 1P (PHONES)	
		(LINK, IC)	
⚠PS601	1-576-124-21	LINK, IC CCP2E25 (1A)	
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Ref. No.	Part No.	Description	Remark
*	A-7071-698-A	JK-86 BOARD, COMPLETE *********************	
		(CONNECTOR)	
CN902	1-691-491-21	CONNECTOR, FFC/FPC 12P	
		(DIODE)	
D901	8-719-420-81	DIODE MA3075WA	
D902	8-719-420-81	DIODE MA3075WA	
D903	8-719-420-81	DIODE MA3075WA	
D904	8-719-420-81	DIODE MA3075WA	
D905	8-719-420-81	DIODE MA3075WA	
D906	8-719-420-81	DIODE MA3075WA	
D907	8-719-420-87	DIODE MA8130	
		(JACK)	
J901	1-537-449-11	TERMINAL BOARD (TUNER)	
**			
*	A-7071-713-A	LA-22 BOARD, COMPLETE *********************	
		(CONNECTOR)	
CN801	1-569-628-12	CONNECTOR, BOARD TO BOARD 3P	
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*	A-7071-714-A	LA-23 BOARD, COMPLETE *********************	
		(CONNECTOR)	
CN802	1-569-628-12	CONNECTOR, BOARD TO BOARD 3P	
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*	A-7053-386-A	MA-137 BOARD, COMPLETE **********************	
	3-719-381-01	SCREW (M2X4)	
		(CAPACITOR)	
C001	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C002	1-162-966-11	CERAMIC CHIP 0.0022uF 10% 50V	
C003	1-162-966-11	CERAMIC CHIP 0.0022uF 10% 50V	
C004	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C005	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	
C006	1-164-633-11	CERAMIC CHIP 0.1uF 10% 25V	
C007	1-162-969-11	CERAMIC CHIP 0.0068uF 10% 25V	
C008	1-163-809-11	CERAMIC CHIP 0.047uF 10% 25V	
C011	1-163-183-00	CERAMIC CHIP 120PF 5% 50V	
C012	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
C013	1-164-633-11	CERAMIC CHIP 0.1uF 10% 25V	
C015	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
C017	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
C018	1-164-473-11	CERAMIC CHIP 820PF 10% 50V	
C019	1-164-473-11	CERAMIC CHIP 820PF 10% 50V	
C020	1-162-963-11	CERAMIC CHIP 680PF 10% 50V	
C021	1-162-963-11	CERAMIC CHIP 680PF 10% 50V	
C022	1-162-962-11	CERAMIC CHIP 470PF 10% 50V	
C023	1-162-963-11	CERAMIC CHIP 680PF 10% 50V	
C024	1-164-634-11	CERAMIC CHIP 1uF 16V	
C025	1-164-634-11	CERAMIC CHIP 1uF 16V	
C026	1-164-836-11	CERAMIC CHIP 6.8uF 16V	
C027	1-164-836-11	CERAMIC CHIP 6.8uF 16V	
C028	1-164-836-11	CERAMIC CHIP 6.8uF 16V	
C029	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C030	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C031	1-162-638-11	CERAMIC CHIP 1uF 16V	
C032	1-164-337-11	CERAMIC CHIP 2.2uF 16V	
C033	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C034	1-162-638-11	CERAMIC CHIP 1uF 16V	
C035	1-164-634-11	CERAMIC CHIP 1uF 16V	
C036	1-164-337-11	CERAMIC CHIP 2.2uF 16V	
C037	1-162-638-11	CERAMIC CHIP 1uF 16V	
C038	1-135-212-21	TANTAL. CHIP 2.2uF 20% 35V	
C039	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
C040	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
C041	1-164-836-11	CERAMIC CHIP 6.8uF 16V	
C042	1-164-836-11	CERAMIC CHIP 6.8uF 16V	
C043	1-164-836-11	CERAMIC CHIP 6.8uF 16V	
C044	1-164-836-11	CERAMIC CHIP 6.8uF 16V	
C091	1-164-346-11	CERAMIC CHIP 1uF 16V	
C092	1-164-346-11	CERAMIC CHIP 1uF 16V	
C093	1-164-346-11	CERAMIC CHIP 1uF 16V	
C094	1-164-346-11	CERAMIC CHIP 1uF 16V	
C095	1-164-346-11	CERAMIC CHIP 1uF 16V	
C096	1-164-346-11	CERAMIC CHIP 1uF 16V	
C097	1-164-346-11	CERAMIC CHIP 1uF 16V	
C098	1-164-506-11	CERAMIC CHIP 4.7uF 16V	
C099	1-164-506-11	CERAMIC CHIP 4.7uF 16V	
C101	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C102	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C103	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C104	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C106	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C108	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C109	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C110	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C111	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C112	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C113	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	

Ref. No.	Part No.	Description	Remark
C114	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C115	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C116	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C117	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C118	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C119	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C120	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C121	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C122	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C123	1-164-362-11	CERAMIC CHIP 470PF 5% 50V	
C124	1-162-918-11	CERAMIC CHIP 18PF 5% 50V	
C125	1-162-917-11	CERAMIC CHIP 15PF 5% 50V	
C126	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C127	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C128	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C129	1-162-905-11	CERAMIC CHIP 1PF 0.25PF50V	
C130	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C131	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C132	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C133	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C135	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C136	1-162-969-11	CERAMIC CHIP 0.0068uF 10% 25V	
C137	1-162-969-11	CERAMIC CHIP 0.0068uF 10% 25V	
C138	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C139	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C140	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C141	1-164-634-11	CERAMIC CHIP 1uF 16V	
C142	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C143	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C144	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C145	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C146	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C147	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C148	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C149	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C150	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C151	1-135-216-11	TANTALUM CHIP 10uF 20% 10V	
C152	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C153	1-135-216-11	TANTALUM CHIP 10uF 20% 10V	
C154	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C155	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C157	1-162-927-11	CERAMIC CHIP 100PF 5% 50V	
C158	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C159	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C160	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C161	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C201	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C202	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C203	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C204	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	

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Ref. No.	Part No.	Description				Remark
C205	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	
C206	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	
C211	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	
C212	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	
C215	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	
C216	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	
C217	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	
C218	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	
C220	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	
C222	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	
C224	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	
C225	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	
C226	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	
C227	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	
C228	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	
C229	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	
C230	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	
C231	1-164-634-11	CERAMIC CHIP	1uF		16V	
C232	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	
C233	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	
C234	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	
C235	1-164-360-11	CERAMIC CHIP	0. 1uF		16V	
C236	1-135-259-11	TANTAL. CHIP	10uF	20%	6. 3V	
C237	1-164-360-11	CERAMIC CHIP	0. 1uF		16V	
C238	1-135-259-11	TANTAL. CHIP	10uF	20%	6. 3V	
C239	1-164-634-11	CERAMIC CHIP	1uF		16V	
C240	1-164-634-11	CERAMIC CHIP	1uF		16V	
C245	1-135-092-21	TANTALUM CHIP	3. 3uF	10%	16V	
C246	1-162-974-11	CERAMIC CHIP	0. 01uF		50V	
C247	1-164-360-11	CERAMIC CHIP	0. 1uF		16V	
C248	1-135-259-11	TANTAL. CHIP	10uF	20%	6. 3V	
C250	1-135-180-21	TANTALUM CHIP	3. 3uF	20%	6. 3V	
C251	1-162-943-11	CERAMIC CHIP	15PF	5%	50V	
C252	1-162-943-11	CERAMIC CHIP	15PF	5%	50V	
C254	1-164-346-11	CERAMIC CHIP	1uF		16V	
C255	1-162-949-11	CERAMIC CHIP	47PF	5%	50V	
C256	1-162-949-11	CERAMIC CHIP	47PF	5%	50V	
C257	1-162-949-11	CERAMIC CHIP	47PF	5%	50V	
C258	1-162-949-11	CERAMIC CHIP	47PF	5%	50V	
C301	1-164-634-11	CERAMIC CHIP	1uF		16V	
C302	1-135-259-11	TANTAL. CHIP	10uF	20%	6. 3V	
C303	1-164-360-11	CERAMIC CHIP	0. 1uF		16V	
C304	1-162-964-11	CERAMIC CHIP	0. 001uF	10%	50V	
C305	1-162-964-11	CERAMIC CHIP	0. 001uF	10%	50V	
C306	1-162-974-11	CERAMIC CHIP	0. 01uF		50V	
C307	1-162-974-11	CERAMIC CHIP	0. 01uF		50V	
C308	1-162-974-11	CERAMIC CHIP	0. 01uF		50V	
C309	1-164-227-11	CERAMIC CHIP	0. 022uF	10%	25V	
C310	1-164-227-11	CERAMIC CHIP	0. 022uF	10%	25V	
C311	1-162-995-11	CERAMIC CHIP	0. 022uF		50V	
C312	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	
C313	1-162-945-11	CERAMIC CHIP	22PF	5%	50V	
C314	1-164-173-11	CERAMIC CHIP	0. 0039uF	10%	50V	
C315	1-164-634-11	CERAMIC CHIP	1uF		16V	
C316	1-135-211-11	TANTAL. CHIP	6. 8uF	20%	6. 3V	
C317	1-135-259-11	TANTAL. CHIP	10uF	20%	6. 3V	
C318	1-164-634-11	CERAMIC CHIP	1uF		16V	
C320	1-164-360-11	CERAMIC CHIP	0. 1uF		16V	
C321	1-135-259-11	TANTAL. CHIP	10uF	20%	6. 3V	
C322	1-165-128-11	CERAMIC CHIP	0. 22uF		16V	
C324	1-164-227-11	CERAMIC CHIP	0. 022uF	10%	25V	
C325	1-163-809-11	CERAMIC CHIP	0. 047uF	10%	25V	
C326	1-164-227-11	CERAMIC CHIP	0. 022uF	10%	25V	
C327	1-162-974-11	CERAMIC CHIP	0. 01uF		50V	
C328	1-162-965-11	CERAMIC CHIP	0. 0015uF	10%	50V	
C329	1-162-965-11	CERAMIC CHIP	0. 0015uF	10%	50V	
C330	1-162-964-11	CERAMIC CHIP	0. 001uF	10%	50V	
C331	1-162-974-11	CERAMIC CHIP	0. 01uF		50V	
C341	1-164-360-11	CERAMIC CHIP	0. 1uF		16V	
C342	1-135-216-11	TANTALUM CHIP	10uF	20%	10V	
C343	1-164-360-11	CERAMIC CHIP	0. 1uF		16V	
C344	1-135-180-21	TANTALUM CHIP	3. 3uF	20%	6. 3V	
C345	1-164-330-21	CERAMIC CHIP	0. 22uF	10%	16V	
C346	1-164-330-21	CERAMIC CHIP	0. 22uF	10%	16V	
C347	1-135-216-11	TANTALUM CHIP	10uF	20%	10V	
C349	1-162-964-11	CERAMIC CHIP	0. 001uF	10%	50V	
C350	1-162-964-11	CERAMIC CHIP	0. 001uF	10%	50V	
C351	1-162-964-11	CERAMIC CHIP	0. 001uF	10%	50V	
C352	1-162-967-11	CERAMIC CHIP	0. 0033uF	10%	50V	
C353	1-164-227-11	CERAMIC CHIP	0. 022uF	10%	25V	
C354	1-162-968-11	CERAMIC CHIP	0. 0047uF	10%	50V	
C356	1-162-968-11	CERAMIC CHIP	0. 0047uF	10%	50V	
C358	1-164-227-11	CERAMIC CHIP	0. 022uF	10%	25V	
C359	1-164-633-11	CERAMIC CHIP	0. 1uF	10%	25V	
C360	1-164-633-11	CERAMIC CHIP	0. 1uF	10%	25V	
C601	1-162-974-11	CERAMIC CHIP	0. 01uF		50V	
C607	1-135-259-11	TANTAL. CHIP	10uF	20%	6. 3V	
C608	1-162-974-11	CERAMIC CHIP	0. 01uF		50V	
C614	1-164-461-11	CERAMIC CHIP	91PF	5%	50V	
C615	1-162-974-11	CERAMIC CHIP	0. 01uF		50V	
C616	1-162-974-11	CERAMIC CHIP	0. 01uF		50V	
C617	1-162-995-11	CERAMIC CHIP	0. 022uF		50V	
C618	1-162-974-11	CERAMIC CHIP	0. 01uF		50V	
C619	1-162-974-11	CERAMIC CHIP	0. 01uF		50V	
C620	1-162-974-11	CERAMIC CHIP	0. 01uF		50V	
C621	1-162-974-11	CERAMIC CHIP	0. 01uF		50V	
C622	1-162-974-11	CERAMIC CHIP	0. 01uF		50V	
C624	1-164-457-11	CERAMIC CHIP	30PF	5%	50V	
C625	1-162-951-11	CERAMIC CHIP	68PF	5%	50V	
C626	1-162-954-11	CERAMIC CHIP	120PF	5%	50V	

Ref. No.	Part No.	Description				Remark
C627	1-162-955-11	CERAMIC CHIP	150PF	5%	50V	
C629	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C630	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	
C631	1-162-995-11	CERAMIC CHIP	0.022uF		50V	
C652	1-162-921-11	CERAMIC CHIP	33PF	5%	50V	
C653	1-162-958-11	CERAMIC CHIP	270PF	5%	50V	
C666	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V	
C667	1-162-950-11	CERAMIC CHIP	56PF	5%	50V	
C668	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C669	1-162-938-11	CERAMIC CHIP	7PF	0.5PF	50V	
C670	1-162-919-11	CERAMIC CHIP	22PF	5%	50V	
C671	1-162-995-11	CERAMIC CHIP	0.022uF		50V	
C672	1-162-995-11	CERAMIC CHIP	0.022uF		50V	
C673	1-162-958-11	CERAMIC CHIP	270PF	5%	50V	
C676	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	
C677	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C678	1-162-995-11	CERAMIC CHIP	0.022uF		50V	
C679	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C680	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C681	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C683	1-162-959-11	CERAMIC CHIP	330PF	5%	50V	
C684	1-162-995-11	CERAMIC CHIP	0.022uF		50V	
C685	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	
C687	1-162-995-11	CERAMIC CHIP	0.022uF		50V	
C688	1-162-995-11	CERAMIC CHIP	0.022uF		50V	
C689	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C691	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C694	1-162-948-11	CERAMIC CHIP	39PF	5%	50V	
C695	1-162-944-11	CERAMIC CHIP	18PF	5%	50V	
C696	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C697	1-162-943-11	CERAMIC CHIP	15PF	5%	50V	
C698	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C699	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C702	1-162-957-11	CERAMIC CHIP	220PF	5%	50V	
C703	1-135-201-11	TANTALUM CHIP	10uF	20%	4V	
C706	1-135-201-11	TANTALUM CHIP	10uF	20%	4V	
C707	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C708	1-162-959-11	CERAMIC CHIP	330PF	5%	50V	
C709	1-164-145-11	CERAMIC CHIP	390PF	5%	50V	
C710	1-164-467-11	CERAMIC CHIP	300PF	5%	50V	
C711	1-135-201-11	TANTALUM CHIP	10uF	20%	4V	
C712	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C713	1-162-954-11	CERAMIC CHIP	120PF	5%	50V	
C714	1-162-952-11	CERAMIC CHIP	82PF	5%	50V	
C715	1-164-005-11	CERAMIC CHIP	0.47uF		25V	
C716	1-135-201-11	TANTALUM CHIP	10uF	20%	4V	
C717	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C718	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	
C719	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C720	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	

Ref. No.	Part No.	Description				Remark
C721	1-135-180-21	TANTALUM CHIP	3.3uF	20%	6.3V	
C722	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C723	1-135-201-11	TANTALUM CHIP	10uF	20%	4V	
C724	1-135-180-21	TANTALUM CHIP	3.3uF	20%	6.3V	
C725	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C727	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	
C728	1-164-634-11	CERAMIC CHIP	1uF		16V	
C729	1-164-634-11	CERAMIC CHIP	1uF		16V	
C730	1-164-005-11	CERAMIC CHIP	0.47uF		25V	
C731	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	
C732	1-165-128-11	CERAMIC CHIP	0.22uF		16V	
C733	1-135-180-21	TANTALUM CHIP	3.3uF	20%	6.3V	
C734	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C735	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	
C736	1-135-335-91	TANTAL. CHIP	100uF	20%	4V	
C737	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C738	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C741	1-164-361-11	CERAMIC CHIP	0.047uF		16V	
C742	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C743	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	
C744	1-162-948-11	CERAMIC CHIP	39PF	5%	50V	
C747	1-162-955-11	CERAMIC CHIP	150PF	5%	50V	
C750	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	
C751	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C752	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C753	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C754	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C756	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C757	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C758	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C760	1-135-180-21	TANTALUM CHIP	3.3uF	20%	6.3V	
C761	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C762	1-135-180-21	TANTALUM CHIP	3.3uF	20%	6.3V	
C763	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C764	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C765	1-135-180-21	TANTALUM CHIP	3.3uF	20%	6.3V	
C766	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C768	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C769	1-164-634-11	CERAMIC CHIP	1uF		16V	
C770	1-162-949-11	CERAMIC CHIP	47PF	5%	50V	
C771	1-162-949-11	CERAMIC CHIP	47PF	5%	50V	
C775	1-162-948-11	CERAMIC CHIP	39PF	5%	50V	
C776	1-162-950-11	CERAMIC CHIP	56PF	5%	50V	
C777	1-162-953-11	CERAMIC CHIP	100PF	5%	50V	
C778	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	
C779	1-162-948-11	CERAMIC CHIP	39PF	5%	50V	
C781	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	
C783	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C784	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C786	1-164-634-11	CERAMIC CHIP	1uF		16V	

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Ref. No.	Part No.	Description	Remark
C787	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C788	1-164-005-11	CERAMIC CHIP 0.47uF 25V	
C789	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C791	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C795	1-164-465-91	CERAMIC CHIP 200PF 5% 50V	
C797	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C798	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C803	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C804	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C805	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C806	1-162-952-11	CERAMIC CHIP 82PF 5% 50V	
C807	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C809	1-162-959-11	CERAMIC CHIP 330PF 5% 50V	
C810	1-135-177-21	TANTALUM CHIP 1uF 20% 20V	
C811	1-135-177-21	TANTALUM CHIP 1uF 20% 20V	
C812	1-135-146-21	TANTALUM CHIP 0.68uF 20% 25V	
C813	1-162-995-11	CERAMIC CHIP 0.022uF 50V	
C816	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C817	1-162-950-11	CERAMIC CHIP 56PF 5% 50V	
C818	1-162-936-11	CERAMIC CHIP 5PF 0.25PF 50V	
C819	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C820	1-162-947-11	CERAMIC CHIP 33PF 5% 50V	
C821	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C822	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C823	1-162-957-11	CERAMIC CHIP 220PF 5% 50V	
C824	1-162-951-11	CERAMIC CHIP 68PF 5% 50V	
C826	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C827	1-162-950-11	CERAMIC CHIP 56PF 5% 50V	
C831	1-162-949-11	CERAMIC CHIP 47PF 5% 50V	
C832	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C833	1-162-952-11	CERAMIC CHIP 82PF 5% 50V	
C834	1-162-967-11	CERAMIC CHIP 0.0033uF 10% 50V	
C835	1-162-953-11	CERAMIC CHIP 100PF 5% 50V	
C836	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C837	1-162-955-11	CERAMIC CHIP 150PF 5% 50V	
C873	1-164-005-11	CERAMIC CHIP 0.47uF 25V	
C981	1-164-506-11	CERAMIC CHIP 4.7uF 16V	
C982	1-164-505-11	CERAMIC CHIP 2.2uF 16V	
C998	1-135-181-21	TANTALUM CHIP 4.7uF 20% 6.3V	
C1801	1-164-634-11	CERAMIC CHIP 1uF 16V	
C1802	1-164-634-11	CERAMIC CHIP 1uF 16V	
		(FILTER, CERAMIC)	
CF801	1-579-370-11	FILTER, CERAMIC	
		(CONNECTOR)	
* CN002	1-580-055-21	PIN, CONNECTOR 2P	
CN003	1-573-303-21	CONNECTOR, BOARD TO BOARD 6P	
CN004	1-695-883-21	CONNECTOR, BOARD TO BOARD 32P	
* CN005	1-560-890-00	PIN, CONNECTOR 2P	

Ref. No.	Part No.	Description	Remark
CN007	1-573-343-21	CONNECTOR, BOARD TO BOARD 30P	
CN011	1-573-922-21	CONNECTOR, FFC/FPC (ZIF) 13P	
CN012	1-573-353-21	CONNECTOR, FFC/FPC 13P	
CN013	1-691-495-21	CONNECTOR, FFC/FPC 16P	
CN015	1-573-921-11	CONNECTOR, FFC/FPC (ZIF) 12P	
CN016	1-573-923-21	CONNECTOR, FFC/FPC (ZIF) 14P	
CN017	1-691-491-21	CONNECTOR, FFC/FPC 12P	
		(DIODE)	
D001	8-719-989-33	DIODE FC806	
D002	8-719-989-03	DIODE DAN222	
D004	8-719-991-00	DIODE DAP222	
D101	8-719-989-03	DIODE DAN222	
D199	8-719-422-91	DIODE MA8091	
D301	8-719-989-00	DIODE DA221	
D310	8-719-989-03	DIODE DAN222	
D601	8-719-951-22	DIODE IMN10	
D602	8-719-989-03	DIODE DAN222	
D603	8-719-989-03	DIODE DAN222	
D701	8-719-989-03	DIODE DAN222	
D1000	8-719-422-91	DIODE MA8091	
D1001	8-719-422-91	DIODE MA8091	
D1002	8-719-989-03	DIODE DAN222	
		(FUSE)	
⚠F101	1-576-213-21	FUSE, CHIP (1.6A, 125V)	
⚠F102	1-576-213-21	FUSE, CHIP (1.6A, 125V)	
⚠F103	1-576-213-21	FUSE, CHIP (1.6A, 125V)	
⚠F104	1-576-213-21	FUSE, CHIP (1.6A, 125V)	
⚠F105	1-576-213-21	FUSE, CHIP (1.6A, 125V)	
		(FERRITE BEAD)	
FB101	1-412-390-21	INDUCTOR CHIP 0uH	
FB102	1-412-390-21	INDUCTOR CHIP 0uH	
FB103	1-412-390-21	INDUCTOR CHIP 0uH	
FB105	1-412-390-21	INDUCTOR CHIP 0uH	
FB201	1-412-390-21	INDUCTOR CHIP 0uH	
FB204	1-412-390-21	INDUCTOR CHIP 0uH	
FB205	1-412-390-21	INDUCTOR CHIP 0uH	
FB206	1-412-390-21	INDUCTOR CHIP 0uH	
FB301	1-412-390-21	INDUCTOR CHIP 0uH	
		(FILTER)	
FL701	1-236-757-21	FILTER, LOW PASS (C)	
FL801	1-239-348-21	FILTER, BAND PASS (CE. NTSC)	
FL802	1-239-109-21	FILTER, BAND PASS	
		(IC)	
IC001	8-759-060-94	IC MB3785APFV-G-BND-ER	
IC091	8-759-509-13	IC XRU4052BF	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
IC101	8-752-836-15	IC CXP80624A-010R	
IC102	8-759-039-01	IC MPC1720M	
IC103	8-759-990-55	IC CXA8006M	
IC201	8-759-099-93	IC MB89092-109	
IC202	8-759-512-69	IC S-81350HG-KD	
IC203	8-759-946-03	IC S-8054ALR-LN-S	
IC204	8-759-044-78	IC AK6420F	
IC205	8-759-999-02	IC TL1596CDB	
IC206	8-759-635-27	IC M62352GP	
IC301	8-759-512-42	IC CXA1481R	
IC601	8-759-012-00	IC MC10H116M	
IC602	8-752-053-21	IC CXA1211M	
IC603	8-759-998-32	IC CXD-2107M	
IC701	8-752-065-54	IC CXA1207AR	
IC702	8-752-053-21	IC CXA1211M	
IC703	8-759-636-33	IC CXA1452	
IC704	8-752-332-68	IC CXL5502M	
IC705	8-759-635-27	IC M62352GP	
IC707	8-759-710-86	IC NJM2233BM	
IC801	8-752-065-56	IC CXA1208R	
		〈 JACK 〉	
J101	1-565-276-21	JACK, ULTRA SMALL 1P (REMOTE)	
		〈 COIL 〉	
L001	1-424-653-11	COIL, CHOKE 10uH	
L002	1-424-674-21	COIL, CHOKE 22uH	
L003	1-412-028-11	INDUCTOR CHIP 4.7uH	
L004	1-412-028-11	INDUCTOR CHIP 4.7uH	
L005	1-424-653-11	COIL, CHOKE 10uH	
L006	1-412-032-11	INDUCTOR CHIP 100uH	
L007	1-412-032-11	INDUCTOR CHIP 100uH	
L008	1-412-032-11	INDUCTOR CHIP 100uH	
L009	1-424-653-11	COIL, CHOKE 10uH	
L010	1-424-674-21	COIL, CHOKE 22uH	
L011	1-424-674-21	COIL, CHOKE 22uH	
L101	1-412-031-11	INDUCTOR CHIP 47uH	
L201	1-412-031-11	INDUCTOR CHIP 47uH	
L301	1-412-029-11	INDUCTOR CHIP 10uH	
L302	1-412-032-11	INDUCTOR CHIP 100uH	
L303	1-412-280-31	INDUCTOR 330uH	
L310	1-412-031-11	INDUCTOR CHIP 47uH	
L603	1-412-280-31	INDUCTOR 330uH	
L607	1-410-657-21	INDUCTOR CHIP 180uH	
L620	1-412-282-41	INDUCTOR 470uH	
L621	1-410-656-11	INDUCTOR CHIP 150uH	
L622	1-412-032-11	INDUCTOR CHIP 100uH	
L623	1-410-385-11	INDUCTOR CHIP 22uH	
L624	1-410-388-21	INDUCTOR CHIP 39uH	
L626	1-412-029-11	INDUCTOR CHIP 10uH	
L629	1-410-380-31	INDUCTOR CHIP 8.2uH	
L630	1-412-280-31	INDUCTOR 330uH	
L631	1-410-656-11	INDUCTOR CHIP 150uH	
L632	1-410-658-31	INDUCTOR CHIP 220uH	
L633	1-412-029-11	INDUCTOR CHIP 10uH	
L634	1-412-029-11	INDUCTOR CHIP 10uH	
L701	1-412-032-11	INDUCTOR CHIP 100uH	
L702	1-412-029-11	INDUCTOR CHIP 10uH	
L706	1-412-031-11	INDUCTOR CHIP 47uH	
L713	1-410-389-31	INDUCTOR CHIP 47uH	
L714	1-410-381-11	INDUCTOR CHIP 10uH	
L716	1-410-389-31	INDUCTOR CHIP 47uH	
L717	1-410-390-11	INDUCTOR CHIP 56uH	
L718	1-410-390-11	INDUCTOR CHIP 56uH	
L719	1-410-385-11	INDUCTOR CHIP 22uH	
L721	1-412-031-11	INDUCTOR CHIP 47uH	
L801	1-410-385-11	INDUCTOR CHIP 22uH	
L802	1-410-385-11	INDUCTOR CHIP 22uH	
L803	1-410-393-11	INDUCTOR CHIP 100uH	
L804	1-410-377-31	INDUCTOR CHIP 4.7uH	
L805	1-410-655-31	INDUCTOR CHIP 120uH	
L806	1-410-393-11	INDUCTOR CHIP 100uH	
L808	1-410-393-11	INDUCTOR CHIP 100uH	
L809	1-410-656-11	INDUCTOR CHIP 150uH	
L906	1-412-028-11	INDUCTOR CHIP 4.7uH	
L907	1-412-028-11	INDUCTOR CHIP 4.7uH	
L1000	1-412-026-11	INDUCTOR CHIP 1uH	
		〈 LINK, IC 〉	
⚠PS101	1-576-123-21	LINK, IC CCP2E20 (0.8A)	
⚠PS201	1-576-122-21	LINK, IC CCP2E10 (0.4A)	
		〈 TRANSISTOR 〉	
⚠Q001	8-729-823-84	TRANSISTOR FP102	
⚠Q002	8-729-823-84	TRANSISTOR FP102	
⚠Q003	8-729-823-84	TRANSISTOR FP102	
⚠Q004	8-729-805-25	TRANSISTOR 2SB1121-S	
Q005	8-729-927-XX	TRANSISTOR 2SC4617R	
⚠Q006	8-752-822-52	TRANSISTOR 2SK1469	
Q007	8-729-928-81	TRANSISTOR DTC144EE	
⚠Q008	8-752-822-52	TRANSISTOR 2SK1469	
Q009	8-729-928-81	TRANSISTOR DTC144EE	
Q010	8-729-928-27	TRANSISTOR DTA144EE	
Q012	8-729-928-81	TRANSISTOR DTC144EE	
Q091	8-729-927-XX	TRANSISTOR 2SC4617R	
Q092	8-729-927-XX	TRANSISTOR 2SC4617R	
Q093	8-729-927-XX	TRANSISTOR 2SC4617R	
Q101	8-729-420-12	TRANSISTOR XN4213	
Q103	8-729-820-46	TRANSISTOR 2SB1202FAS	
Q202	8-729-927-XX	TRANSISTOR 2SC4617R	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

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Ref. No.	Part No.	Description	Remark
Q203	8-729-928-81	TRANSISTOR DTC144EE	
Q310	8-729-927-XX	TRANSISTOR 2SC4617R	
Q311	8-729-927-65	TRANSISTOR UMT1	
Q312	8-729-928-90	TRANSISTOR DTC114EE	
Q313	8-729-823-95	TRANSISTOR FC149	
Q609	8-729-927-XX	TRANSISTOR 2SC4617R	
Q611	8-729-927-XX	TRANSISTOR 2SC4617R	
Q619	8-729-928-72	TRANSISTOR DTA114TE	
Q621	8-729-928-72	TRANSISTOR DTA114TE	
Q622	8-729-927-XX	TRANSISTOR 2SC4617R	
Q623	8-729-927-XX	TRANSISTOR 2SC4617R	
Q625	8-729-928-72	TRANSISTOR DTA114TE	
Q626	8-729-927-XX	TRANSISTOR 2SC4617R	
Q627	8-729-927-XX	TRANSISTOR 2SC4617R	
Q628	8-729-928-19	TRANSISTOR 2SA1774R	
Q629	8-729-928-19	TRANSISTOR 2SA1774R	
Q630	8-729-927-XX	TRANSISTOR 2SC4617R	
Q631	8-729-927-XX	TRANSISTOR 2SC4617R	
Q632	8-729-927-XX	TRANSISTOR 2SC4617R	
Q633	8-729-927-XX	TRANSISTOR 2SC4617R	
Q634	8-729-928-81	TRANSISTOR DTC144EE	
Q701	8-729-928-81	TRANSISTOR DTC144EE	
Q702	8-729-202-38	TRANSISTOR 2SC3326N-A	
Q703	8-729-202-38	TRANSISTOR 2SC3326N-A	
Q705	8-729-928-81	TRANSISTOR DTC144EE	
Q706	8-729-928-27	TRANSISTOR DTA144EE	
Q707	8-729-928-81	TRANSISTOR DTC144EE	
Q708	8-729-928-81	TRANSISTOR DTC144EE	
Q712	8-729-928-19	TRANSISTOR 2SA1774R	
Q713	8-729-927-XX	TRANSISTOR 2SC4617R	
Q714	8-729-927-XX	TRANSISTOR 2SC4617R	
Q717	8-729-927-XX	TRANSISTOR 2SC4617R	
Q719	8-729-927-XX	TRANSISTOR 2SC4617R	
Q720	8-729-927-XX	TRANSISTOR 2SC4617R	
Q721	8-729-927-XX	TRANSISTOR 2SC4617R	
Q722	8-729-927-XX	TRANSISTOR 2SC4617R	
Q723	8-729-928-27	TRANSISTOR DTA144EE	
Q724	8-729-928-19	TRANSISTOR 2SA1774R	
Q730	8-729-928-81	TRANSISTOR DTC144EE	
Q732	8-729-927-XX	TRANSISTOR 2SC4617R	
Q755	8-729-928-90	TRANSISTOR DTC114EE	
Q760	8-729-927-XX	TRANSISTOR 2SC4617R	
Q761	8-729-927-XX	TRANSISTOR 2SC4617R	
Q765	8-729-927-XX	TRANSISTOR 2SC4617R	
Q766	8-729-928-19	TRANSISTOR 2SA1774R	
Q768	8-729-905-35	TRANSISTOR 2SC4081-R	
Q801	8-729-927-XX	TRANSISTOR 2SC4617R	
Q803	8-729-928-81	TRANSISTOR DTC144EE	
Q804	8-729-927-XX	TRANSISTOR 2SC4617R	
Q805	8-729-928-19	TRANSISTOR 2SA1774R	

Ref. No.	Part No.	Description	Remark
Q806	8-729-927-XX	TRANSISTOR 2SC4617R	
Q807	8-729-930-13	TRANSISTOR UMH2	
Q1601	8-729-928-19	TRANSISTOR 2SA1774R	
Q1602	8-729-928-81	TRANSISTOR DTC144EE	
Q1603	8-729-928-19	TRANSISTOR 2SA1774R	
Q1604	8-729-930-13	TRANSISTOR UMH2	
Q1605	8-729-928-81	TRANSISTOR DTC144EE	
Q1606	8-729-928-72	TRANSISTOR DTA114TE	
Q1801	8-729-927-XX	TRANSISTOR 2SC4617R	
Q1802	8-729-927-XX	TRANSISTOR 2SC4617R	
Q1803	8-729-928-27	TRANSISTOR DTA144EE	
		〈 RESISTOR 〉	
R001	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R003	1-216-864-11	METAL CHIP 0 5% 1/16W	
R004	1-216-832-11	METAL CHIP 8.2K 5% 1/16W	
R005	1-218-345-11	METAL CHIP 9.1K 0.50% 1/16W	
R006	1-218-714-11	METAL CHIP 8.2K 0.50% 1/16W	
R007	1-216-836-11	METAL CHIP 18K 5% 1/16W	
R008	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R009	1-216-847-11	METAL CHIP 150K 5% 1/16W	
R011	1-216-864-11	METAL CHIP 0 5% 1/16W	
R012	1-216-834-11	METAL CHIP 12K 5% 1/16W	
R013	1-218-738-11	METAL CHIP 82K 0.50% 1/16W	
R014	1-216-795-11	METAL CHIP 6.8K 0.50% 1/16W	
R015	1-216-795-11	METAL CHIP 6.8K 0.50% 1/16W	
R016	1-216-795-11	METAL CHIP 6.8K 0.50% 1/16W	
R017	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R018	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R019	1-216-843-11	METAL CHIP 68K 5% 1/16W	
R020	1-216-838-11	METAL CHIP 27K 5% 1/16W	
R021	1-218-295-11	METAL CHIP 5.6K 0.50% 1/16W	
R023	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R024	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	
R025	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R027	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	
R028	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	
R029	1-216-831-11	METAL CHIP 6.8K 5% 1/16W	
R030	1-216-033-00	METAL CHIP 220 5% 1/10W	
R031	1-216-033-00	METAL CHIP 220 5% 1/10W	
R032	1-216-037-00	METAL CHIP 330 5% 1/10W	
R033	1-216-021-00	METAL CHIP 68 5% 1/10W	
R034	1-216-009-00	METAL CHIP 22 5% 1/10W	
R035	1-216-789-11	METAL CHIP 2.2 5% 1/16W	
R036	1-216-295-00	METAL CHIP 0 5% 1/10W	
R037	1-216-295-00	METAL CHIP 0 5% 1/10W	
R038	1-216-864-11	METAL CHIP 0 5% 1/16W	
R040	1-216-849-11	METAL CHIP 220K 5% 1/16W	
R041	1-216-849-11	METAL CHIP 220K 5% 1/16W	
R048	1-216-821-11	METAL CHIP 1K 5% 1/16W	

Ref. No.	Part No.	Description				Remark
R049	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R081	1-216-025-00	METAL CHIP	100	5%	1/10W	
R082	1-216-025-00	METAL CHIP	100	5%	1/10W	
R093	1-216-834-11	METAL CHIP	12K	5%	1/16W	
R094	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R095	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R096	1-216-851-11	METAL CHIP	330K	5%	1/16W	
R097	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R098	1-216-851-11	METAL CHIP	330K	5%	1/16W	
R102	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R103	1-216-853-11	METAL CHIP	470K	5%	1/16W	
R104	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R105	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R106	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R107	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R108	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R109	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R110	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R111	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R112	1-216-295-00	METAL CHIP	0	5%	1/10W	
R113	1-216-295-00	METAL CHIP	0	5%	1/10W	
R114	1-216-851-11	METAL CHIP	330K	5%	1/16W	
R115	1-216-851-11	METAL CHIP	330K	5%	1/16W	
R116	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R117	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R121	1-216-864-11	METAL CHIP	0	5%	1/16W	
R122	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R123	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R124	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R125	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R126	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R127	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R128	1-216-295-00	METAL CHIP	0	5%	1/10W	
R129	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R130	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R131	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R132	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R133	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R134	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R135	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R137	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R153	1-216-864-11	METAL CHIP	0	5%	1/16W	
R193	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R194	1-216-864-11	METAL CHIP	0	5%	1/16W	
R195	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R196	1-218-348-11	METAL CHIP	110K	5%	1/16W	
R197	1-216-832-11	METAL CHIP	8.2K	5%	1/16W	
R198	1-216-849-11	METAL CHIP	220K	5%	1/16W	
R199	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R199	1-216-845-11	METAL CHIP	100K	5%	1/16W	

Ref. No.	Part No.	Description				Remark
R201	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R202	1-216-295-00	METAL CHIP	0	5%	1/10W	
R203	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R204	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R205	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R206	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R208	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R209	1-216-815-11	METAL CHIP	330	5%	1/16W	
R210	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R211	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R212	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R213	1-216-815-11	METAL CHIP	330	5%	1/16W	
R214	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R215	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R217	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R220	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R221	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R222	1-216-295-00	METAL CHIP	0	5%	1/10W	
R223	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R224	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R225	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R226	1-216-295-00	METAL CHIP	0	5%	1/10W	
R227	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R228	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R230	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R231	1-216-295-00	METAL CHIP	0	5%	1/10W	
R233	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R234	1-216-295-00	METAL CHIP	0	5%	1/10W	
R235	1-216-851-11	METAL CHIP	330K	5%	1/16W	
R236	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R237	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R238	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R239	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R240	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R241	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R242	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R244	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R272	1-216-826-11	METAL CHIP	2.7K	5%	1/16W	
R273	1-216-809-11	METAL CHIP	100	5%	1/16W	
R274	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R275	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R283	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R284	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R285	1-216-843-11	METAL CHIP	68K	5%	1/16W	
R286	1-216-851-11	METAL CHIP	330K	5%	1/16W	
R299	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R301	1-216-817-11	METAL CHIP	470	5%	1/16W	
R302	1-216-817-11	METAL CHIP	470	5%	1/16W	
R303	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R303-2	1-216-295-00	METAL CHIP	0	5%	1/10W	

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Ref. No.	Part No.	Description				Remark
R304	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R305	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R306	1-216-295-00	METAL CHIP	0	5%	1/10W	
R307	1-216-295-00	METAL CHIP	0	5%	1/10W	
R308	1-216-295-00	METAL CHIP	0	5%	1/10W	
R309	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R310	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R311	1-216-836-11	METAL CHIP	18K	5%	1/16W	
R312	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R313	1-216-849-11	METAL CHIP	220K	5%	1/16W	
R314	1-216-830-11	METAL CHIP	5.6K	5%	1/16W	
R315	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R316	1-216-838-11	METAL CHIP	27K	5%	1/16W	
R317	1-216-844-11	METAL CHIP	82K	5%	1/16W	
R319	1-216-857-11	METAL CHIP	1M	5%	1/16W	
R322	1-216-819-11	METAL CHIP	680	5%	1/16W	
R330	1-216-843-11	METAL CHIP	68K	5%	1/16W	
R331	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R333	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R334	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R336	1-216-037-00	METAL CHIP	330	5%	1/10W	
R337	1-217-671-11	METAL CHIP	1	5%	1/10W	
R338	1-217-671-11	METAL CHIP	1	5%	1/10W	
R339	1-217-671-11	METAL CHIP	1	5%	1/10W	
R340	1-217-671-11	METAL CHIP	1	5%	1/10W	
R341	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R342	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R343	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R344	1-216-838-11	METAL CHIP	27K	5%	1/16W	
R345	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R346	1-216-838-11	METAL CHIP	27K	5%	1/16W	
R347	1-216-838-11	METAL CHIP	27K	5%	1/16W	
R348	1-216-838-11	METAL CHIP	27K	5%	1/16W	
R349	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R354	1-216-864-11	METAL CHIP	0	5%	1/16W	
R356	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R357	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R360	1-216-174-00	METAL CHIP	100	5%	1/8W	
R362	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R363	1-216-851-11	METAL CHIP	330K	5%	1/16W	
R364	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R365	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R367	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R368	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R369	1-216-295-00	METAL CHIP	0	5%	1/10W	
R373	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R374	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R381	1-216-864-11	METAL CHIP	0	5%	1/16W	
R397	1-216-864-11	METAL CHIP	0	5%	1/16W	
R602	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R603	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R606	1-216-817-11	METAL CHIP	470	5%	1/16W	
R607	1-216-817-11	METAL CHIP	470	5%	1/16W	
R612	1-216-817-11	METAL CHIP	470	5%	1/16W	
R613	1-216-817-11	METAL CHIP	470	5%	1/16W	
R614	1-216-809-11	METAL CHIP	100	5%	1/16W	
R615	1-216-818-11	METAL CHIP	560	5%	1/16W	
R616	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R617	1-216-817-11	METAL CHIP	470	5%	1/16W	
R618	1-216-817-11	METAL CHIP	470	5%	1/16W	
R619	1-216-817-11	METAL CHIP	470	5%	1/16W	
R620	1-216-817-11	METAL CHIP	470	5%	1/16W	
R621	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R622	1-216-817-11	METAL CHIP	470	5%	1/16W	
R623	1-216-818-11	METAL CHIP	560	5%	1/16W	
R624	1-216-812-11	METAL CHIP	180	5%	1/16W	
R626	1-216-817-11	METAL CHIP	470	5%	1/16W	
R627	1-216-817-11	METAL CHIP	470	5%	1/16W	
R628	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R629	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R634	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R635	1-216-818-11	METAL CHIP	560	5%	1/16W	
R636	1-216-834-11	METAL CHIP	12K	5%	1/16W	
R637	1-216-815-11	METAL CHIP	330	5%	1/16W	
R639	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R640	1-216-864-11	METAL CHIP	0	5%	1/16W	
R642	1-216-818-11	METAL CHIP	560	5%	1/16W	
R643	1-216-819-11	METAL CHIP	680	5%	1/16W	
R644	1-216-811-11	METAL CHIP	150	5%	1/16W	
R646	1-216-830-11	METAL CHIP	5.6K	5%	1/16W	
R662	1-216-820-11	METAL CHIP	820	5%	1/16W	
R663	1-216-864-11	METAL CHIP	0	5%	1/16W	
R664	1-216-814-11	METAL CHIP	270	5%	1/16W	
R667	1-216-818-11	METAL CHIP	560	5%	1/16W	
R668	1-216-822-11	METAL CHIP	1.2K	5%	1/16W	
R669	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R671	1-216-834-11	METAL CHIP	12K	5%	1/16W	
R672	1-216-835-11	METAL CHIP	15K	5%	1/16W	
R673	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R674	1-216-813-11	METAL CHIP	220	5%	1/16W	
R675	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R676	1-216-814-11	METAL CHIP	270	5%	1/16W	
R677	1-216-809-11	METAL CHIP	100	5%	1/16W	
R678	1-216-823-11	METAL CHIP	1.5K	5%	1/16W	
R679	1-216-864-11	METAL CHIP	0	5%	1/16W	
R680	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R682	1-216-834-11	METAL CHIP	12K	5%	1/16W	
R683	1-216-835-11	METAL CHIP	15K	5%	1/16W	
R685	1-216-819-11	METAL CHIP	680	5%	1/16W	
R686	1-216-816-11	METAL CHIP	390	5%	1/16W	

Ref.No.	Part No.	Description				Remark
R687	1-216-819-11	METAL CHIP	680	5%	1/16W	
R688	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R689	1-216-819-11	METAL CHIP	680	5%	1/16W	
R690	1-216-818-11	METAL CHIP	560	5%	1/16W	
R691	1-216-817-11	METAL CHIP	470	5%	1/16W	
R692	1-216-816-11	METAL CHIP	390	5%	1/16W	
R693	1-216-819-11	METAL CHIP	680	5%	1/16W	
R694	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R702	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R703	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R704	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R705	1-216-835-11	METAL CHIP	15K	5%	1/16W	
R706	1-216-826-11	METAL CHIP	2.7K	5%	1/16W	
R708	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R709	1-216-826-11	METAL CHIP	2.7K	5%	1/16W	
R710	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R711	1-216-822-11	METAL CHIP	1.2K	5%	1/16W	
R712	1-216-817-11	METAL CHIP	470	5%	1/16W	
R714	1-216-816-11	METAL CHIP	390	5%	1/16W	
R715	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R716	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R717	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R720	1-216-812-11	METAL CHIP	180	5%	1/16W	
R721	1-216-015-00	METAL CHIP	39	5%	1/10W	
R722	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R723	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R724	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R725	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R726	1-216-857-11	METAL CHIP	1M	5%	1/16W	
R727	1-216-864-11	METAL CHIP	0	5%	1/16W	
R729	1-216-013-00	METAL CHIP	33	5%	1/10W	
R730	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R731	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R732	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R733	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R734	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R735	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R737	1-216-851-11	METAL CHIP	330K	5%	1/16W	
R738	1-216-853-11	METAL CHIP	470K	5%	1/16W	
R740	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R741	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R742	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R743	1-216-864-11	METAL CHIP	0	5%	1/16W	
R744	1-216-815-11	METAL CHIP	330	5%	1/16W	
R745	1-216-820-11	METAL CHIP	820	5%	1/16W	
R746	1-216-817-11	METAL CHIP	470	5%	1/16W	
R747	1-216-864-11	METAL CHIP	0	5%	1/16W	
R752	1-216-864-11	METAL CHIP	0	5%	1/16W	
R753	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R754	1-216-824-11	METAL CHIP	1.8K	5%	1/16W	

Ref.No.	Part No.	Description				Remark
R755	1-216-828-11	METAL CHIP	3.9K	5%	1/16W	
R756	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R757	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R758	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R759	1-216-844-11	METAL CHIP	82K	5%	1/16W	
R761	1-216-864-11	METAL CHIP	0	5%	1/16W	
R762	1-216-864-11	METAL CHIP	0	5%	1/16W	
R764	1-216-857-11	METAL CHIP	1M	5%	1/16W	
R765	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R766	1-216-842-11	METAL CHIP	56K	5%	1/16W	
R767	1-216-817-11	METAL CHIP	470	5%	1/16W	
R768	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R769	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R770	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R771	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R772	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R773	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R774	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R784	1-216-864-11	METAL CHIP	0	5%	1/16W	
R785	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R786	1-216-817-11	METAL CHIP	470	5%	1/16W	
R787	1-216-820-11	METAL CHIP	820	5%	1/16W	
R788	1-216-820-11	METAL CHIP	820	5%	1/16W	
R789	1-216-815-11	METAL CHIP	330	5%	1/16W	
R790	1-216-819-11	METAL CHIP	680	5%	1/16W	
R791	1-216-817-11	METAL CHIP	470	5%	1/16W	
R792	1-216-820-11	METAL CHIP	820	5%	1/16W	
R793	1-216-828-11	METAL CHIP	3.9K	5%	1/16W	
R795	1-216-864-11	METAL CHIP	0	5%	1/16W	
R796	1-216-814-11	METAL CHIP	270	5%	1/16W	
R797	1-216-864-11	METAL CHIP	0	5%	1/16W	
R798	1-216-809-11	METAL CHIP	100	5%	1/16W	
R799	1-216-822-11	METAL CHIP	1.2K	5%	1/16W	
R801	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R802	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R803	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R804	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R806	1-216-831-11	METAL CHIP	6.8K	5%	1/16W	
R807	1-216-830-11	METAL CHIP	5.6K	5%	1/16W	
R808	1-216-831-11	METAL CHIP	6.8K	5%	1/16W	
R809	1-216-828-11	METAL CHIP	3.9K	5%	1/16W	
R810	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R811	1-216-832-11	METAL CHIP	8.2K	5%	1/16W	
R815	1-216-864-11	METAL CHIP	0	5%	1/16W	
R816	1-216-817-11	METAL CHIP	470	5%	1/16W	
R817	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R818	1-216-834-11	METAL CHIP	12K	5%	1/16W	
R819	1-216-809-11	METAL CHIP	100	5%	1/16W	
R821	1-216-822-11	METAL CHIP	1.2K	5%	1/16W	
R822	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	

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Ref. No.	Part No.	Description				Remark
R823	1-216-822-11	METAL CHIP	1.2K	5%	1/16W	
R824	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R825	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R826	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R828	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R829	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R830	1-216-818-11	METAL CHIP	560	5%	1/16W	
R831	1-216-864-11	METAL CHIP	0	5%	1/16W	
R832	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R834	1-216-864-11	METAL CHIP	0	5%	1/16W	
R835	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R842	1-216-864-11	METAL CHIP	0	5%	1/16W	
R868	1-216-864-11	METAL CHIP	0	5%	1/16W	
R873	1-216-864-11	METAL CHIP	0	5%	1/16W	
R876	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R887	1-216-864-11	METAL CHIP	0	5%	1/16W	
R889	1-216-864-11	METAL CHIP	0	5%	1/16W	
R893	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R894	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R1000	1-216-295-00	METAL CHIP	0	5%	1/10W	
R1602	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R1603	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R1604	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R1605	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R1606	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R1607	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R1701	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R1702	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R1703	1-216-820-11	METAL CHIP	820	5%	1/16W	
R1704	1-216-819-11	METAL CHIP	680	5%	1/16W	
R1705	1-216-819-11	METAL CHIP	680	5%	1/16W	
R1706	1-216-819-11	METAL CHIP	680	5%	1/16W	
R1707	1-216-864-11	METAL CHIP	0	5%	1/16W	
R1708	1-216-864-11	METAL CHIP	0	5%	1/16W	
R1718	1-216-838-11	METAL CHIP	27K	5%	1/16W	
R1719	1-216-842-11	METAL CHIP	56K	5%	1/16W	
R1720	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R1721	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R1722	1-216-797-11	METAL CHIP	10	5%	1/16W	
R1725	1-216-819-11	METAL CHIP	680	5%	1/16W	
R1726	1-216-022-00	METAL CHIP	75	5%	1/10W	
R1728	1-216-864-11	METAL CHIP	0	5%	1/16W	
R1732	1-216-864-11	METAL CHIP	0	5%	1/16W	
R1733	1-216-820-11	METAL CHIP	820	5%	1/16W	
R1734	1-218-484-11	METAL CHIP	750	5%	1/16W	
R1736	1-216-864-11	METAL CHIP	0	5%	1/16W	
R1750	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R1801	1-216-864-11	METAL CHIP	0	5%	1/16W	
R1803	1-216-864-11	METAL CHIP	0	5%	1/16W	
R1805	1-216-845-11	METAL CHIP	100K	5%	1/16W	

Ref. No.	Part No.	Description				Remark
R1806	1-216-849-11	METAL CHIP	220K	5%	1/16W	
R1807	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R1808	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R1809	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R1810	1-216-843-11	METAL CHIP	68K	5%	1/16W	
R1811	1-216-833-11	METAL CHIP	10K	5%	1/16W	
		(NETWORK, RES)				
RB101	1-236-412-11	NETWORK, RES 1.0K				
RB102	1-236-412-11	NETWORK, RES 1.0K				
RB103	1-236-412-11	NETWORK, RES 1.0K				
RB104	1-236-424-11	NETWORK, RES 10K				
RB105	1-236-424-11	NETWORK, RES 10K				
RB106	1-236-424-11	NETWORK, RES 10K				
RB107	1-236-412-11	NETWORK, RES 1.0K				
RB108	1-236-424-11	NETWORK, RES 10K				
RB109	1-236-436-11	NETWORK, RES 100K				
RB110	1-236-436-11	NETWORK, RES 100K				
RB111	1-236-436-11	NETWORK, RES 100K				
RB112	1-236-412-11	NETWORK, RES 1.0K				
RB151	1-236-904-11	NETWORK, RES 1.0K				
RB152	1-236-904-11	NETWORK, RES 1.0K				
RB153	1-236-904-11	NETWORK, RES 1.0K				
RB154	1-236-904-11	NETWORK, RES 1.0K				
RB155	1-236-904-11	NETWORK, RES 1.0K				
RB156	1-236-904-11	NETWORK, RES 1.0K				
RB157	1-236-908-11	NETWORK, RES 10K				
RB158	1-236-908-11	NETWORK, RES 10K				
RB201	1-236-436-11	NETWORK, RES 100K				
RB203	1-236-412-11	NETWORK, RES 1.0K				
RB204	1-236-412-11	NETWORK, RES 1.0K				
RB205	1-236-412-11	NETWORK, RES 1.0K				
RB206	1-236-412-11	NETWORK, RES 1.0K				
RB208	1-236-424-11	NETWORK, RES 10K				
RB209	1-236-424-11	NETWORK, RES 10K				
RB210	1-236-424-11	NETWORK, RES 10K				
RB212	1-236-424-11	NETWORK, RES 10K				
RB221	1-236-424-11	NETWORK, RES 10K				
RB222	1-236-424-11	NETWORK, RES 10K				
RB224	1-236-424-11	NETWORK, RES 10K				
RB251	1-236-904-11	NETWORK, RES 1.0K				
RB352	1-236-424-11	NETWORK, RES 10K				
RB353	1-236-424-11	NETWORK, RES 10K				
RB600	1-236-424-11	NETWORK, RES 10K				
RB702	1-236-424-11	NETWORK, RES 10K				
RB703	1-236-424-11	NETWORK, RES 10K				
RB704	1-236-424-11	NETWORK, RES 10K				
RB801	1-236-412-11	NETWORK, RES 1.0K				
RB802	1-236-412-11	NETWORK, RES 1.0K				
RB803	1-236-412-11	NETWORK, RES 1.0K				

Ref. No.	Part No.	Description	Remark
RB804	1-236-412-11	NETWORK, RES 1.0K	
		(VARIABLE RESISTOR)	
RV701	1-241-475-11	RES, ADJ, CERMET 1K	
		(SWITCH)	
S201	1-572-921-11	SWITCH, KEY BOARD	
		(TRANSFORMER)	
T001	1-423-308-21	TRANSFORMER, CONVERTER	
		(CRYSTAL)	
X101	1-579-367-21	VIBRATOR, CRYSTAL (11.89MHz)	
X201	1-579-369-21	VIBRATOR (10MHz)	
X202	1-579-550-11	VIBRATOR, CRYSTAL (32.768kHz)	
X801	1-579-365-21	VIBRATOR, CRYSTAL (3.58MHz)	

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Ref. No.	Part No.	Description	Remark
*	A-7071-697-A	PE-13 BOARD, COMPLETE *********************	
		(CAPACITOR)	
C201	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C202	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C203	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C204	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
		(CONNECTOR)	
CN201	1-573-346-21	CONNECTOR, FFC/FPC 6P	
		(RESISTOR)	
R201	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	
		(SWITCH)	
S201	1-572-921-11	SWITCH, KEY BOARD (EJECT)	
S202	1-572-921-11	SWITCH, KEY BOARD (POWER)	
S203	1-572-921-11	SWITCH, KEY BOARD (COUNTER RESET)	
S204	1-572-921-11	SWITCH, KEY BOARD (DATA SCREEN)	
S206	1-692-280-11	SWITCH, PUSH (1 KEY) (LCD ON SW)	

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Ref. No.	Part No.	Description	Remark
*	A-7053-327-A	RG-25 BOARD, COMPLETE *********************	
		(CAPACITOR)	
C901	1-128-004-11	ELECT CHIP 10uF 20% 16V	
C902	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
C903	1-126-206-11	ELECT CHIP 100uF 20% 6.3V	
C904	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C905	1-162-965-11	CERAMIC CHIP 0.0015uF 10% 50V	
C906	1-135-091-00	TANTALUM CHIP 1uF 20% 16V	
C907	1-162-925-11	CERAMIC CHIP 68PF 5% 50V	
C908	1-162-915-11	CERAMIC CHIP 10PF 0.5PF 50V	
C909	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C910	1-128-065-11	ELECT CHIP 68uF 20% 10V	
C911	1-164-382-11	CERAMIC CHIP 91PF 5% 50V	
C912	1-162-924-11	CERAMIC CHIP 56PF 5% 50V	
C913	1-164-382-11	CERAMIC CHIP 91PF 5% 50V	
C914	1-162-924-11	CERAMIC CHIP 56PF 5% 50V	
C915	1-164-382-11	CERAMIC CHIP 91PF 5% 50V	
C916	1-162-924-11	CERAMIC CHIP 56PF 5% 50V	
C917	1-135-091-00	TANTALUM CHIP 1uF 20% 16V	
C918	1-135-070-00	TANTALUM CHIP 0.1uF 10% 35V	
C919	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C920	1-164-489-11	CERAMIC CHIP 0.22uF 10% 16V	
C921	1-128-013-11	ELECT CHIP 1uF 20% 50V	
C924	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C926	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C927	1-163-077-00	CERAMIC CHIP 0.1uF 10% 25V	
C928	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C929	1-162-968-11	CERAMIC CHIP 0.0047uF 10% 50V	
C931	1-162-947-11	CERAMIC CHIP 33PF 5% 50V	
C932	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C933	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C934	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C936	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C937	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C941	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C942	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C943	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C947	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C951	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C952	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C953	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C954	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C955	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C956	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C961	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C962	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C967	1-162-921-11	CERAMIC CHIP 33PF 5% 50V	
C969	1-162-962-11	CERAMIC CHIP 470PF 10% 50V	
C970	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C975	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C976	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C977	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C978	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C979	1-135-215-21	TANTAL. CHIP 6.8uF 20% 16V	
C997	1-163-833-00	CERAMIC CHIP 0.068uF 25V	

RG-25

Ref. No.	Part No.	Description	Remark
		(CONNECTOR)	
CN901	1-573-315-21	CONNECTOR, BOARD TO BOARD 30P	
		(CAP, TRIMMER)	
CV901	1-141-311-11	CAP, TRIMMER 20PF	
		(DIODE)	
D901	8-719-989-03	DIODE DAN222	
D902	8-719-989-03	DIODE DAN222	
D903	8-719-938-67	LED GL-3EG8	
		(IC)	
IC901	8-752-056-40	IC CXA1385Q	
IC902	8-752-057-28	IC CXA1485Q	
IC903	8-759-084-06	IC uPD6453GT-622-E2	
IC904	8-759-234-13	IC TC4S30F	
IC905	8-759-209-69	IC TC4S11F	
IC906	8-759-635-27	IC M62352GP	
		(COIL)	
L901	1-412-031-11	INDUCTOR CHIP 47uH	
L902	1-412-030-11	INDUCTOR CHIP 22uH	
L903	1-412-955-11	INDUCTOR 22uH	
L904	1-412-955-11	INDUCTOR 22uH	
L905	1-412-955-11	INDUCTOR 22uH	
L960	1-412-198-11	INDUCTOR 220uH	
L961	1-412-191-11	INDUCTOR 47uH	
		(TRANSISTOR)	
Q903	8-729-928-81	TRANSISTOR DTC144EE	
Q904	8-729-928-81	TRANSISTOR DTC144EE	
Q906	8-729-928-19	TRANSISTOR 2SA1774R	
Q907	8-729-927-XX	TRANSISTOR 2SC4617R	
Q908	8-729-928-27	TRANSISTOR DTA144EE	
Q909	8-729-927-XX	TRANSISTOR 2SC4617R	
Q910	8-729-928-19	TRANSISTOR 2SA1774R	
Q911	8-729-928-81	TRANSISTOR DTC144EE	
		(RESISTOR)	
R901	1-216-864-11	METAL CHIP 0 5% 1/16W	
R902	1-216-815-11	METAL CHIP 330 5% 1/16W	
R903	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R904	1-218-724-11	METAL CHIP 22K 0.50% 1/16W	
R905	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R907	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R908	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R909	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R911	1-216-844-11	METAL CHIP 82K 5% 1/16W	
R912	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R913	1-216-834-11	METAL CHIP 12K 5% 1/16W	
R914	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R915	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R916	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R918	1-216-855-11	METAL CHIP 680K 5% 1/16W	
R919	1-216-855-11	METAL CHIP 680K 5% 1/16W	
R920	1-218-725-11	METAL CHIP 24K 0.50% 1/16W	
R922	1-216-864-11	METAL CHIP 0 5% 1/16W	
R923	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R924	1-216-832-11	METAL CHIP 8.2K 5% 1/16W	
R925	1-216-838-11	METAL CHIP 27K 5% 1/16W	
R926	1-218-294-11	METAL CHIP 30K 5% 1/16W	
R927	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R928	1-218-725-11	METAL CHIP 24K 0.50% 1/16W	
R929	1-216-857-11	METAL CHIP 1M 5% 1/16W	
R930	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R931	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R932	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R933	1-216-817-11	METAL CHIP 470 5% 1/16W	
R934	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R935	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R936	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R937	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R939	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R941	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R942	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R943	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R944	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R945	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R947	1-216-864-11	METAL CHIP 0 5% 1/16W	
R948	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R960	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R961	1-216-864-11	METAL CHIP 0 5% 1/16W	
R964	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R965	1-216-027-00	METAL CHIP 120 5% 1/10W	
R966	1-216-843-11	METAL CHIP 68K 5% 1/16W	
R967	1-216-835-11	METAL CHIP 15K 5% 1/16W	
R968	1-216-840-11	METAL CHIP 39K 5% 1/16W	
R969	1-216-840-11	METAL CHIP 39K 5% 1/16W	
R999	1-216-850-11	METAL CHIP 270K 5% 1/16W	
		(NETWORK, RES)	
RB960	1-236-412-11	NETWORK, RES 1.0K	
RB961	1-236-412-11	NETWORK, RES 1.0K	
RB962	1-236-412-11	NETWORK, RES 1.0K	
RB963	1-236-412-11	NETWORK, RES 1.0K	
		(VARIABLE RESISTOR)	
RV901	1-241-481-11	RES, ADJ, CERMET 100K	
RV902	1-241-481-11	RES, ADJ, CERMET 100K	
RV903	1-241-483-11	RES, ADJ, CERMET 470K	

Ref. No.	Part No.	Description	Remark
		(CRYSTAL)	
X901	1-579-041-11	VIBRATOR, CRYSTAL (3.58MHz)	

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Ref. No.	Part No.	Description	Remark
*	A-7063-328-A	RP-144 BOARD, COMPLETE	

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(CAPACITOR)

Ref. No.	Part No.	Description	Remark
C1001	1-164-361-11	CERAMIC CHIP 0.047uF 16V	
C1002	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C1003	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C1004	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C1005	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C1006	1-164-361-11	CERAMIC CHIP 0.047uF 16V	
C1007	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C1008	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C1009	1-164-361-11	CERAMIC CHIP 0.047uF 16V	
C1010	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C1011	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C1012	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C1013	1-164-005-11	CERAMIC CHIP 0.47uF 25V	
C1014	1-164-633-11	CERAMIC CHIP 0.1uF 10% 25V	
C1015	1-164-633-11	CERAMIC CHIP 0.1uF 10% 25V	
C1016	1-164-633-11	CERAMIC CHIP 0.1uF 10% 25V	
C1017	1-164-633-11	CERAMIC CHIP 0.1uF 10% 25V	
C1018	1-164-005-11	CERAMIC CHIP 0.47uF 25V	
C1019	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C1020	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C1021	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C1023	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C1024	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C1025	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C1041	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C1042	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C1043	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C1044	1-162-953-11	CERAMIC CHIP 100PF 5% 50V	
C1045	1-162-952-11	CERAMIC CHIP 82PF 5% 50V	
C1046	1-162-953-11	CERAMIC CHIP 100PF 5% 50V	
C1047	1-162-955-11	CERAMIC CHIP 150PF 5% 50V	
		(CONNECTOR)	
CN052	1-691-490-21	CONNECTOR, FFC/FPC 11P	
CN053	1-573-768-21	PIN, CONNECTOR (1.5MM) (SMD)5P	
		(IC)	
IC1001	8-752-033-38	IC CXA1202R	

Ref. No.	Part No.	Description	Remark
		(COIL)	
L1001	1-412-029-11	INDUCTOR CHIP 10uH	
L1002	1-412-033-11	INDUCTOR CHIP 220uH	
L1003	1-412-033-11	INDUCTOR CHIP 220uH	
L1041	1-412-198-11	INDUCTOR 220uH	
L1042	1-412-137-11	INDUCTOR 10uH	
		(TRANSISTOR)	
Q1001	8-729-928-27	TRANSISTOR DTA144EE	
Q1041	8-729-928-19	TRANSISTOR 2SA1774R	
Q1042	8-729-820-76	TRANSISTOR 2SA1179-M5M6	
Q1043	8-729-928-19	TRANSISTOR 2SA1774R	
		(RESISTOR)	
R1001	1-216-830-11	METAL CHIP 5.6K 5% 1/16W	
R1002	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R1003	1-216-864-11	METAL CHIP 0 5% 1/16W	
R1004	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R1006	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R1007	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R1008	1-216-838-11	METAL CHIP 27K 5% 1/16W	
R1009	1-216-838-11	METAL CHIP 27K 5% 1/16W	
R1010	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R1011	1-216-834-11	METAL CHIP 12K 5% 1/16W	
R1012	1-216-838-11	METAL CHIP 27K 5% 1/16W	
R1013	1-216-838-11	METAL CHIP 27K 5% 1/16W	
R1014	1-216-791-11	METAL CHIP 3.3 5% 1/16W	
R1015	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R1016	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R1018	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R1019	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R1020	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R1021	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	
R1022	1-216-830-11	METAL CHIP 5.6K 5% 1/16W	
R1023	1-216-809-11	METAL CHIP 100 5% 1/16W	
R1024	1-216-809-11	METAL CHIP 100 5% 1/16W	
R1041	1-216-840-11	METAL CHIP 39K 5% 1/16W	
R1042	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R1043	1-216-814-11	METAL CHIP 270 5% 1/16W	
R1044	1-216-813-11	METAL CHIP 220 5% 1/16W	
R1045	1-216-803-11	METAL CHIP 33 5% 1/16W	
R1046	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R1047	1-216-799-11	METAL CHIP 15 5% 1/16W	
R1048	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R1049	1-216-831-11	METAL CHIP 6.8K 5% 1/16W	
		(FLEXIBLE BOARD)	
W051	1-645-994-11	FP-628 FLEXIBLE BOARD	

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SL-26 TM-118

Ref. No.	Part No.	Description	Remark
*	A-7063-329-A	SL-26 BOARD, COMPLETE ********************	
		(CAPACITOR)	
C101	1-128-004-11	ELECT CHIP 10uF 20% 16V	
C102	1-128-004-11	ELECT CHIP 10uF 20% 16V	
C103	1-128-013-11	ELECT CHIP 1uF 20% 50V	
C104	1-163-809-11	CERAMIC CHIP 0.047uF 10% 25V	
C105	1-162-968-11	CERAMIC CHIP 0.0047uF 10% 50V	
C106	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C107	1-165-128-11	CERAMIC CHIP 0.22uF 16V	
C108	1-165-128-11	CERAMIC CHIP 0.22uF 16V	
C109	1-165-128-11	CERAMIC CHIP 0.22uF 16V	
		(CONNECTOR)	
CN101	1-691-482-21	CONNECTOR, FFC/FPC 15P	
CN102	1-691-472-21	CONNECTOR, FFC/FPC 6P	
CN103	1-691-473-21	CONNECTOR, FFC/FPC 7P	
		(IC)	
IC101	8-759-059-09	IC LB8111V	
		(TRANSISTOR)	
Q101	8-729-902-93	TRANSISTOR FMG4	
		(RESISTOR)	
R101	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R102	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R103	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R104	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R106	1-216-150-00	METAL CHIP 10 5% 1/8W	
R107	1-216-840-11	METAL CHIP 39K 5% 1/16W	
R108	1-216-864-11	METAL CHIP 0 5% 1/16W	
R111	1-216-864-11	METAL CHIP 0 5% 1/16W	
R112	1-216-864-11	METAL CHIP 0 5% 1/16W	
R113	1-216-864-11	METAL CHIP 0 5% 1/16W	
R114	1-216-864-11	METAL CHIP 0 5% 1/16W	
		(FLEXIBLE BOARD)	
W101	1-645-363-11	FP-562 FLEXIBLE BOARD	
W102	1-642-186-11	FP-437 FLEXIBLE BOARD	

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Ref. No.	Part No.	Description	Remark
*	A-7063-381-A	TM-118 BOARD, COMPLETE *********************	
		(BATTERY HOLDER)	
BT300	1-550-414-11	HOLDER, BATTERY	
		(CAPACITOR)	
C200	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C201	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C202	1-164-816-11	CERAMIC CHIP 220PF 2% 50V	
C203	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C204	1-164-346-11	CERAMIC CHIP 1uF 16V	
C205	1-164-222-11	CERAMIC CHIP 0.22uF 25V	
C206	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C207	1-162-960-11	CERAMIC CHIP 220PF 10% 50V	
C208	1-162-961-11	CERAMIC CHIP 330PF 10% 50V	
C209	1-135-159-21	TANTALUM CHIP 10uF 10% 20V	
C210	1-162-953-11	CERAMIC CHIP 100PF 5% 50V	
C211	1-135-079-21	TANTALUM CHIP 3.3uF 10% 35V	
C212	1-135-161-21	TANTALUM CHIP 22uF 10% 10V	
C213	1-162-955-11	CERAMIC CHIP 150PF 5% 50V	
C214	1-163-036-00	CERAMIC CHIP 0.068uF 50V	
C215	1-135-159-21	TANTALUM CHIP 10uF 10% 20V	
C216	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C217	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C220	1-164-346-11	CERAMIC CHIP 1uF 16V	
C300	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C301	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C302	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C303	1-135-159-21	TANTALUM CHIP 10uF 10% 20V	
C304	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C305	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C306	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C307	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C308	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C309	1-162-949-11	CERAMIC CHIP 47PF 5% 50V	
C310	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C311	1-162-949-11	CERAMIC CHIP 47PF 5% 50V	
C400	1-124-778-00	ELECT CHIP 22uF 20% 6.3V	
C401	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C402	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C403	1-162-919-11	CERAMIC CHIP 22PF 5% 50V	
C404	1-162-924-11	CERAMIC CHIP 56PF 5% 50V	
C406	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C407	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C408	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C409	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C410	1-162-949-11	CERAMIC CHIP 47PF 5% 50V	
C411	1-162-949-11	CERAMIC CHIP 47PF 5% 50V	
C412	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C413	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C414	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C415	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C416	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C417	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C418	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	

Ref. No.	Part No.	Description	Remark
C419	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C426	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C427	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C428	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C429	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C430	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C431	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C432	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C433	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C434	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C435	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C436	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C500	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C501	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C502	1-164-473-11	CERAMIC CHIP 820PF 5% 50V	
C503	1-135-091-00	TANTALUM CHIP 1uF 20% 16V	
C504	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C505	1-164-505-11	CERAMIC CHIP 2.2uF 16V	
C506	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	
C507	1-164-343-11	CERAMIC CHIP 0.056uF 10% 25V	
C508	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C509	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C510	1-162-945-11	CERAMIC CHIP 22PF 5% 50V	
C513	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C514	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C515	1-124-779-00	ELECT CHIP 10uF 20% 16V	
C516	1-162-918-11	CERAMIC CHIP 18PF 5% 50V	
C517	1-162-917-11	CERAMIC CHIP 15PF 5% 50V	
C518	1-126-246-11	ELECT CHIP 220uF 20% 4V	
C519	1-124-779-00	ELECT CHIP 10uF 20% 16V	
C520	1-124-779-00	ELECT CHIP 10uF 20% 16V	
C521	1-124-779-00	ELECT CHIP 10uF 20% 16V	
C522	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C523	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C530	1-162-926-11	CERAMIC CHIP 82PF 5% 50V	
C999	1-135-161-21	TANTALUM CHIP 22uF 10% 10V	
		(CAP, ADJ)	
CV400	1-141-423-61	CAP, ADJ	
		(DIODE)	
D200	8-719-802-36	DIODE 1SS250	
D201	8-719-938-75	DIODE SB05-05CP	
D300	8-719-941-09	DIODE DAP202U	
⚠D301	8-719-421-27	DIODE MA728	
D302	8-719-941-09	DIODE DAP202U	
D400	8-719-800-56	LED TLUR164	
D500	8-719-420-81	DIODE MA3075WA	
D501	8-719-420-81	DIODE MA3075WA	
D502	8-719-106-80	DIODE RD13M-B2	

Ref. No.	Part No.	Description	Remark
D503	8-719-106-80	DIODE RD13M-B2	
D504	8-719-106-80	DIODE RD13M-B2	
D510	8-719-421-15	DIODE MA8027	
		(FERRITE BEAD)	
FB400	1-412-390-21	INDUCTOR CHIP 0uH	
FB401	1-412-390-21	INDUCTOR CHIP 0uH	
FB402	1-412-390-21	INDUCTOR CHIP 0uH	
FB403	1-412-390-21	INDUCTOR CHIP 0uH	
FB404	1-412-390-21	INDUCTOR CHIP 0uH	
FB405	1-412-390-21	INDUCTOR CHIP 0uH	
FB406	1-412-390-21	INDUCTOR CHIP 0uH	
FB407	1-412-390-21	INDUCTOR CHIP 0uH	
FB408	1-412-390-21	INDUCTOR CHIP 0uH	
		(IC)	
IC200	8-759-990-45	IC MB3775PFV	
IC300	8-759-512-69	IC S-81350HG-KD	
IC301	8-759-720-45	IC CAT35C202K	
IC302	8-759-946-03	IC S-8054ALR-LN-S	
IC303	8-759-999-02	IC TL1596CDB	
IC304	8-759-940-33	IC S-8052ALO-LG-S	
IC400	8-759-083-08	IC MB89794BPF-177	
IC500	8-759-083-11	IC LA7217M	
IC501	8-759-098-47	IC MB90075PF-122	
IC502	8-759-209-97	IC TC4S81F	
		(COIL)	
L200	1-424-522-21	COIL, CHOKE 10uH	
L201	1-424-522-21	COIL, CHOKE 10uH	
L202	1-408-790-00	INDUCTOR CHIP 120uH	
L203	1-424-524-21	COIL, CHOKE 47uH	
L400	1-412-979-21	INDUCTOR 1uH	
L401	1-412-031-11	INDUCTOR CHIP 47uH	
L500	1-406-452-11	COIL, OSC	
L501	1-412-031-11	INDUCTOR CHIP 47uH	
		(LINK, IC)	
⚠PS300	1-532-605-00	LINK, IC ICP-N10 (0.4A)	
		(TRANSISTOR)	
Q200	8-729-428-88	TRANSISTOR UN9113	
Q201	8-729-425-64	TRANSISTOR 2SD2216Q	
Q202	8-729-425-50	TRANSISTOR 2SB1462Q	
Q203	8-729-425-64	TRANSISTOR 2SD2216Q	
Q204	8-729-425-64	TRANSISTOR 2SD2216Q	
Q205	8-729-141-48	TRANSISTOR 2SB624-BV345	
Q206	8-729-601-58	TRANSISTOR 2SC3053-C	
Q207	8-729-429-18	TRANSISTOR UN9213	
Q300	8-729-425-50	TRANSISTOR 2SB1462Q	

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Ref. No.	Part No.	Description				Remark
Q301	8-729-425-64	TRANSISTOR 2SD2216Q				
⚠Q302	8-729-220-93	TRANSISTOR 2SK209-G				
⚠Q303	8-729-220-93	TRANSISTOR 2SK209-G				
Q304	8-729-429-18	TRANSISTOR UN9213				
Q305	8-729-425-64	TRANSISTOR 2SD2216Q				
Q306	8-729-220-93	TRANSISTOR 2SK209-G				
Q400	8-729-929-26	TRANSISTOR DTC114TE				
Q500	8-729-427-72	TRANSISTOR XP4501				
Q501	8-729-425-64	TRANSISTOR 2SD2216Q				
Q502	8-729-425-50	TRANSISTOR 2SB1462Q				
Q503	8-729-425-50	TRANSISTOR 2SB1462Q				
		(RESISTOR)				
R200	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R201	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R202	1-216-831-11	METAL CHIP	6.8K	5%	1/16W	
R203	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R204	1-216-836-11	METAL CHIP	18K	5%	1/16W	
R205	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R206	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R207	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R208	1-216-035-00	METAL CHIP	270	5%	1/10W	
R209	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R210	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R211	1-218-716-11	METAL CHIP	10K	0.50%	1/16W	
R212	1-218-749-11	METAL CHIP	240K	0.50%	1/16W	
R213	1-218-698-11	METAL CHIP	1.8K	0.50%	1/16W	
R214	1-216-818-11	METAL CHIP	560	5%	1/16W	
R215	1-218-708-11	METAL CHIP	4.7K	0.50%	1/16W	
R216	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R217	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R218	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R219	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R220	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R221	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R300	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R301	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R302	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R303	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R304	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R305	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R306	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R307	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R308	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R310	1-216-861-11	METAL CHIP	2.2M	5%	1/16W	
R311	1-216-861-11	METAL CHIP	2.2M	5%	1/16W	
R312	1-216-826-11	METAL CHIP	2.7K	5%	1/16W	
R313	1-216-840-11	METAL CHIP	39K	5%	1/16W	
R315	1-216-809-11	METAL CHIP	100	5%	1/16W	
R316	1-216-854-11	METAL CHIP	560K	5%	1/16W	

Ref. No.	Part No.	Description				Remark
R317	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R318	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R400	1-216-819-11	METAL CHIP	680	5%	1/16W	
R401	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R402	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R403	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R404	1-216-857-11	METAL CHIP	1M	5%	1/16W	
R405	1-216-864-11	METAL CHIP	0	5%	1/16W	
R406	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R407	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R408	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R409	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R410	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R411	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R412	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R413	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R414	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R415	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R416	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R417	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R418	1-216-864-11	METAL CHIP	0	5%	1/16W	
R420	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R421	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R422	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R423	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R424	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R425	1-216-846-11	METAL CHIP	120K	5%	1/16W	
R426	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R427	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R428	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R429	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R431	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R432	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R434	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R436	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R440	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R450	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R500	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R501	1-216-818-11	METAL CHIP	560	5%	1/16W	
R503	1-216-847-11	METAL CHIP	150K	5%	1/16W	
R504	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R505	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R506	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R508	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R509	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R510	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R511	1-216-864-11	METAL CHIP	0	5%	1/16W	
R512	1-216-828-11	METAL CHIP	3.9K	5%	1/16W	
R513	1-216-822-11	METAL CHIP	1.2K	5%	1/16W	
R514	1-216-839-11	METAL CHIP	33K	5%	1/16W	

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Ref. No.	Part No.	Description	Remark
R515	1-216-809-11	METAL CHIP 100 5% 1/16W	
R516	1-216-835-11	METAL CHIP 15K 5% 1/16W	
R517	1-216-819-11	METAL CHIP 680 5% 1/16W	
R518	1-216-832-11	METAL CHIP 8.2K 5% 1/16W	
R519	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	
R520	1-216-817-11	METAL CHIP 470 5% 1/16W	
R521	1-216-864-11	METAL CHIP 0 5% 1/16W	
R522	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R523	1-216-834-11	METAL CHIP 12K 5% 1/16W	

(NETWORK, RES)

Ref. No.	Part No.	Description	Remark
RB401	1-236-436-11	NETWORK, RES 100K	
RB402	1-236-424-11	NETWORK, RES 10K	
RB403	1-236-424-11	NETWORK, RES 10K	
RB405	1-236-412-11	NETWORK, RES 1.0K	
RB406	1-236-424-11	NETWORK, RES 10K	
RB407	1-236-424-11	NETWORK, RES 10K	
RB408	1-236-412-11	NETWORK, RES 1.0K	
RB409	1-236-412-11	NETWORK, RES 1.0K	
RB410	1-236-412-11	NETWORK, RES 1.0K	
RB411	1-236-424-11	NETWORK, RES 10K	
RB412	1-236-436-11	NETWORK, RES 100K	
RB413	1-236-424-11	NETWORK, RES 10K	

(SWITCH)

Ref. No.	Part No.	Description	Remark
S402	1-692-032-21	SWITCH, TACTILE (HORIZONTAL) (CHANNEL +)	
S403	1-692-032-21	SWITCH, TACTILE (HORIZONTAL) (ENTER)	
S404	1-692-032-21	SWITCH, TACTILE (HORIZONTAL) (▷)	
S405	1-692-032-21	SWITCH, TACTILE (HORIZONTAL) (◁)	
S406	1-692-032-21	SWITCH, TACTILE (HORIZONTAL) (▽)	
S407	1-692-032-21	SWITCH, TACTILE (HORIZONTAL) (△)	
S408	1-692-032-21	SWITCH, TACTILE (HORIZONTAL) (MENU)	
S414	1-570-114-11	SWITCH, SLIDE (INPUT SEL)	

(FLEXIBLE BOARD)

Ref. No.	Part No.	Description	Remark
W400	1-645-418-11	FP-569 FLEXIBLE BOARD	

(CRYSTAL)

Ref. No.	Part No.	Description	Remark
X400	1-579-550-11	VIBRATOR, CRYSTAL (32.768kHz)	
X401	1-578-689-21	VIBRATOR (8MHz)	
X500	1-578-690-11	VIBRATOR, CERAMIC (500kHz)	
X501	1-579-738-21	VIBRATOR, CRYSTAL (14.318MHz)	

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Ref. No.	Part No.	Description	Remark
*	A-7063-380-A	TU-142 BOARD, COMPLETE	

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(CAPACITOR)

Ref. No.	Part No.	Description	Remark
C100	1-163-036-00	CERAMIC CHIP 0.068uF 50V	
C101	1-163-036-00	CERAMIC CHIP 0.068uF 50V	
C102	1-163-036-00	CERAMIC CHIP 0.068uF 50V	
C103	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C104	1-162-921-11	CERAMIC CHIP 33PF 5% 50V	
C110	1-164-361-11	CERAMIC CHIP 0.047uF 16V	
C111	1-164-361-11	CERAMIC CHIP 0.047uF 16V	
C112	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C113	1-163-035-00	CERAMIC CHIP 0.047uF 50V	
C115	1-164-361-11	CERAMIC CHIP 0.047uF 16V	
C116	1-164-361-11	CERAMIC CHIP 0.047uF 16V	
C117	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C118	1-164-361-11	CERAMIC CHIP 0.047uF 16V	
C119	1-124-779-00	ELECT CHIP 10uF 20% 16V	
C120	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C121	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C122	1-164-361-11	CERAMIC CHIP 0.047uF 16V	
C124	1-135-149-21	TANTALUM CHIP 2.2uF 20% 6.3V	
C127	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	
C128	1-162-927-11	CERAMIC CHIP 100PF 5% 50V	
C129	1-162-968-11	CERAMIC CHIP 0.0047uF 10% 50V	
C130	1-162-918-11	CERAMIC CHIP 18PF 5% 50V	
C131	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C132	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	
C133	1-135-181-21	TANTALUM CHIP 4.7uF 20% 6.3V	
C135	1-135-259-11	TANTALUM CHIP 10uF 20% 6.3V	
C139	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C141	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C142	1-135-166-21	TANTALUM CHIP 47uF 10% 10V	
C150	1-164-005-11	CERAMIC CHIP 0.47uF 25V	
C190	1-135-259-11	TANTALUM CHIP 10uF 20% 6.3V	
C192	1-162-974-11	CERAMIC CHIP 0.01uF 50V	

(CONNECTOR)

Ref. No.	Part No.	Description	Remark
CN100	1-573-366-21	CONNECTOR, FFC/FPC 26P	

(DIODE)

Ref. No.	Part No.	Description	Remark
D100	8-719-941-09	DIODE DAP202U	

(IF BLOCK)

Ref. No.	Part No.	Description	Remark
IF100	1-466-869-21	IF BLOCK (IFJ-450L)	

(JACK)

Ref. No.	Part No.	Description	Remark
J100	1-507-921-00	JACK (EXT ANT)	

(COIL)

Ref. No.	Part No.	Description	Remark
L101	1-412-031-11	INDUCTOR CHIP 47uH	
L102	1-412-944-11	INDUCTOR 2.7uH	
L104	1-412-031-11	INDUCTOR CHIP 47uH	
L105	1-412-952-11	INDUCTOR 12uH	

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Ref. No.	Part No.	Description	Remark
		〈 LINK, IC 〉	
⚠PS100	1-576-123-21	LINK, IC CCP2E20 (0.8A)	
		〈 TRANSISTOR 〉	
Q100	8-729-928-42	TRANSISTOR DTA143EE	
Q102	8-729-928-42	TRANSISTOR DTA143EE	
Q103	8-729-425-64	TRANSISTOR 2SD2216Q	
Q105	8-729-425-64	TRANSISTOR 2SD2216Q	
Q106	8-729-425-50	TRANSISTOR 2SB1462Q	
Q107	8-729-425-64	TRANSISTOR 2SD2216Q	
Q108	8-729-425-64	TRANSISTOR 2SD2216Q	
Q109	8-729-425-64	TRANSISTOR 2SD2216Q	
Q111	8-729-425-64	TRANSISTOR 2SD2216Q	
		〈 RESISTOR 〉	
R022	1-216-864-11	METAL CHIP 0 5% 1/16W	
R100	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R101	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R102	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R103	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R104	1-216-851-11	METAL CHIP 330K 5% 1/16W	
R109	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R110	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R111	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R114	1-218-344-11	METAL CHIP 7.5K 5% 1/16W	
R115	1-216-864-11	METAL CHIP 0 5% 1/16W	
R116	1-216-864-11	METAL CHIP 0 5% 1/16W	
R118	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	
R119	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	
R120	1-216-814-11	METAL CHIP 270 5% 1/16W	
R121	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	
R123	1-216-857-11	METAL CHIP 1M 5% 1/16W	
R124	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R125	1-216-828-11	METAL CHIP 3.9K 5% 1/16W	
R126	1-216-826-11	METAL CHIP 2.7K 5% 1/16W	
R127	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R129	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R130	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R132	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R133	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R134	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R135	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R137	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R138	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R140	1-216-864-11	METAL CHIP 0 5% 1/16W	
R170	1-216-025-11	METAL CHIP 100 5% 1/16W	
R171	1-216-025-11	METAL CHIP 100 5% 1/16W	
R191	1-216-864-11	METAL CHIP 0 5% 1/16W	

Ref. No.	Part No.	Description	Remark
		〈 SWITCH 〉	
S100	1-692-032-21	SWITCH, TACTILE (HORIZONTAL) (CHANNEL -)	
S101	1-692-032-21	SWITCH, TACTILE (HORIZONTAL) (TIMER CLEAR)	
S102	1-692-032-21	SWITCH, TACTILE (HORIZONTAL) (TIMER REC)	
S103	1-692-032-21	SWITCH, TACTILE (HORIZONTAL) (TIMER CHECK)	
		〈 TUNER, ET 〉	
⚠TU100	1-465-926-11	TUNER, ET (BT-HA301)	

****

Ref. No.	Part No.	Description	Remark
*	A-7071-700-A	VR-39 BOARD, COMPLETE ********************	
		〈 CAPACITOR 〉	
C501	1-126-395-11	ELECT 22uF 20% 16V	
C502	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
		〈 CONNECTOR 〉	
CN501	1-580-056-21	PIN, CONNECTOR 3P	
CN502	1-573-923-21	CONNECTOR, FFC/FPC (ZIF) 14P	
CN503	1-573-921-11	CONNECTOR, FFC/FPC (ZIF) 12P	
		〈 COIL 〉	
L501	1-412-028-11	INDUCTOR CHIP 4.7uH	
		〈 RESISTOR 〉	
R501	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R502	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R503	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	
R504	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R505	1-216-833-11	METAL CHIP 10K 5% 1/16W	
		〈 SWITCH 〉	
S501	1-572-473-11	SWITCH, TACTIL (VOL +)	
S502	1-572-473-11	SWITCH, TACTIL (VOL -)	
S503	1-572-473-11	SWITCH, TACTIL (BRT +)	
S504	1-572-473-11	SWITCH, TACTIL (BRT -)	
S505	1-572-473-11	SWITCH, TACTIL (MENU)	
S506	1-572-473-11	SWITCH, TACTIL (ENTER)	
		〈 FLEXIBLE BOARD 〉	
W501	1-645-365-11	FP-564 FLEXIBLE BOARD	

****

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

MISCELLANEOUS
****

Ref. No.	Part No.	Description	Remark
62	1-645-364-11	FP-563 FLEXIBLE BOARD	
63	1-645-368-11	FP-568 FLEXIBLE BOARD	
⚠69	1-466-791-11	INVERTER UNIT, DC/AC (DPS-28)	
101	1-645-995-11	FP-629 FLEXIBLE BOARD	
110	1-645-367-11	FP-566 FLEXIBLE BOARD	
112	1-645-366-11	FP-565 FLEXIBLE BOARD	
117	1-691-471-11	CONNECTOR, TRANSLATION 11P	
251	A-7049-568-A	DRUM ASSY, UPPER (DGR-93-R)	
361	1-501-456-11	ANTENNA, TELESCOPIC	
BL901	1-517-126-11	FLUORESENT TUBE, HEAT CATHODE	
J401	1-569-556-11	JACK (VIDEO/AUDIO)	
J901	1-537-449-11	TERMINAL BOARD (TUNER/CAMERA)	
J902	1-537-420-21	TERMINAL BOARD (BATTERY)	
J903	1-580-009-21	SOCKET, CONNECTOR (SQUARE) 12P (A/V OUT)	
LCD901	1-809-500-11	MODULE, COLOR LIQUID CRYSTAL	
M901	A-7048-635-A	DRUM ASSY (DGH-93A-R)	
M902	8-835-492-01	MOTOR, DC SCE-0102A (CAPSTAN)	
M903	A-7040-304-A	MOTOR BLOCK ASSY, LM (LOADING)	
S001	1-572-986-11	SWITCH, ROTARY (ENCODER)	
S002	1-572-987-11	SWITCH, PUSH (3 KEY) (REC PROOF, ME/MP, MP/MP-HG)	
S005	1-570-771-21	SWITCH (C DOWN)	
SP901	1-504-137-11	SPEAKER (3.6CM)	

****

ACCESSORIES & PACKING MATERIALS
****

Ref. No.	Part No.	Description	Remark
	1-417-173-11	DISTRIBUTOR, ANTENNA	
	1-528-174-31	BATTERY, LITHIUM (CR2032 TYPE)	(US)
	3-316-688-01	BAG, PROTECTION	
	3-755-611-21	MANUAL, INSTRUCTION (ENGLISH)	(US)
	3-755-611-31	MANUAL, INSTRUCTION (FRENCH)	(Canadian)
	3-755-628-21	MANUAL, INSTRUCTION (ENGLISH)	(US)
	3-755-628-31	MANUAL, INSTRUCTION (ENGLISH, FRENCH)	(Canadian)
*	3-949-755-01	INDIVIDUAL CARTON	
*	3-949-756-01	CUSHION (LOWER)	
*	3-949-758-01	CUSHION, ACC	
	8-953-314-95	HEADPHONE MDR-E757/BK SET	

****

HARDWARE LIST
****

Ref. No.	Part No.	Description	Remark
#1	7-624-102-04	STOP RING 1.5, TYPE -E	
#2	7-627-853-57	PRECISION SCREW +P2X5	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

SECTION 7
MECHANICAL SECTION ADJUSTMENTS

Mechanism Section Adjustments

For details of adjustments and checks of the mechanism section, and the replacement of mechanism parts, refer to the separate volume "8 mm Video MECHANISM ADJUSTMENT Manual IV A MECHANISM " (9-973-199-11).
Refer to the following for how to set the track shift mode.

7-1. SETTING OF TRACK SHIFT MODE

1) Refer to "2. DISASSEMBLY", and supply the power with the cabinet section removed. (So that the mechanism deck section can be operated.)
2) Connect the adjusting remote commander, and turn on the HOLD switch.
3) Select page: 1, address: 00, and set data: 01.
(Releasing the protect.)
4) Select page: D, address: 01, and set data: 03.
(Setting the track shift mode.)
5) Press the PAUSE button of the adjusting remote commander.
6) Turn off the HOLD switch of the adjusting remote commander. (The adjusting remote commander can be removed after this.)
7) After completing all operations, be sure to perform "7-3. Processing After Operations".

7-2. PREPARATIONS FOR ADJUSTMENTS

1) Clean the tape path face (tape guide, drum, capstan shaft, pinch roller).
2) Connect the oscilloscope.
CH1: Pin ② of CN053 on RP-144 board (V RF OUT)
CH2: Pin ③ of CN053 on RP-144 board (RF SW P)
3) Play back the alignment tape for adjusting tracking (WR5-1NP: 8-967-995-02).
4) Check that the RF waveform of the oscilloscope is flat at the entrance and exit. (Refer to Figs. 7-1, 7-2.)
If not flat, perform necessary adjustment according to the separate 8 mm Video Mechanical Adjustment Ⅳ (A Mechanism).
5) After adjusting, perform "7-3. Processing After Operations".

7-3. Processing After Operations

1) Connect the adjusting remote commander, and turn on the HOLD switch.
2) Select page: 1, address: 00, and set data: 01.
3) Select page: D, address: 01, and set data: 00.
4) Press the PAUSE button of the adjusting remote commander.
5) Disconnect the power supply of the unit.

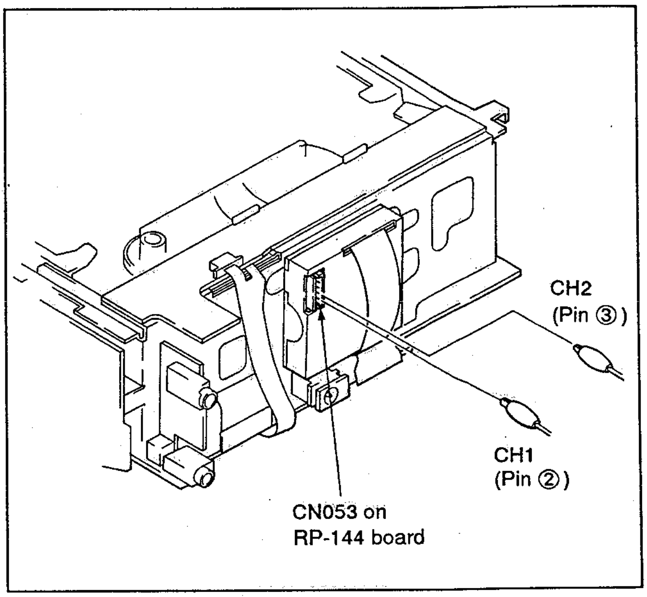


Fig.7-1.

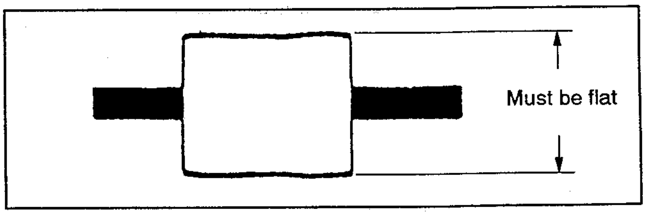


Fig.7-2.

SECTION 8
ELECTRICAL ADJUSTMENTS

When adjusting, refer to the layout diagrams for adjustment related parts beginning from page 206.

8-1. PREPARATIONS BEFORE ADJUSTMENTS

Use the following measuring equipments for adjusting the video section.

8-1-1. Equipments Used

1) TV Monitor
2) Oscilloscope 2 phenomena, band 30 MHz or wider, with delay mode (Use 10:1 probe unless specified otherwise.)
3) Frequency counter
4) Pattern generator with video output terminal
5) Digital voltmeter
6) Audio generator
7) Audio level meter
8) Audio distortion meter
9) Audio attenuator
10) Regulated power supply
11) Alignment tape

    For adjusting tracking (WR5-1NP)
    Part code: 8-967-995-02
    For adjusting video frequency characteristics (WR5-7NE)
    Part code: 8-967-995-13
    For checking operations
    (WR5-4NL)Note 1
    Part code: 8-967-995-51
    (WR5-5NSP)Note 2
    Part code: 8-967-995-42
    (WR5-8NSE)
    Part code: 8-967-995-43
    For checking AFM stereo operations (WR5-9NS)
    Part code: 8-967-995-23

    Note: 1) The WR5-3NL (8-967-995-31) alignment tape can be used instead.
    2) The WR5-4NSP (8-967-995-41) alignment tape can be used instead.

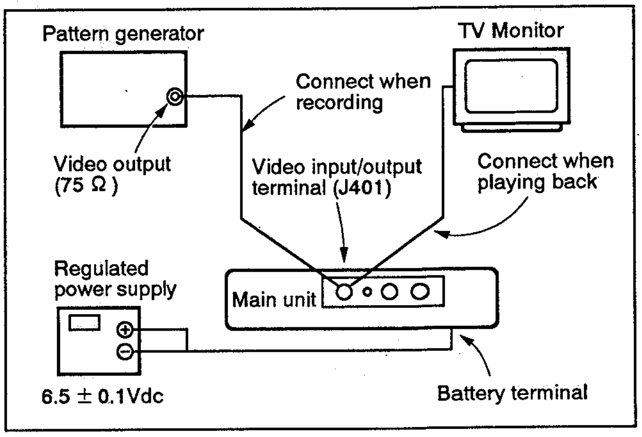
12) Adjusting remote commander (J-6082-053-A)

    Note: If the micro processor IC in the adjusting remote commander is not the new model (μPD7503G-C56-12), pages cannot be switched. Therefore, replace with the new one (8-759-148-35).

8-1-2. Connecting the Equipments

Connect the measuring equipments as shown in Fig. 8-1 and adjust, unless specified otherwise.

- Connect the adjusting remote commander to the remote control terminal (J101 on MA-137 board).



Pattern generator
TV Monitor
Connect when recording
Video output (75 Ω)
Video input/output terminal (J401)
Connect when playing back
Regulated power supply
Main unit
6.5 ± 0.1Vdc
Battery terminal

Fig. 8-1.

8-1-3. Precautions Upon Adjustments

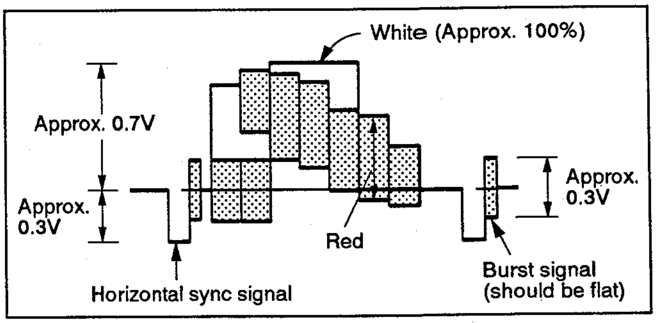
1) The LCD unit is not required except in the "LCD system adjustment". Remove it when not required.

8-1-4. Setup during Adjustment

Because the video signal obtained from the pattern generator is used as the adjustment signal for electrical adjustments, it must satisfy the given specifications.

Connect the oscilloscope to the video input/output terminal of the AU-136 board, and check that the amplitude of the sync signal of the video signal is approximately 0.3V, the amplitude of the video section is approximately 0.7V, the amplitude of the burst signal is approximately 0.3V and flat, and the level ratio of the burst signal to the "red"

signal is 0.30: 0.66. The video signal (color bar) used in electrical adjustments is shown in Fig. 8-2.



White (Approx. 100%)
Approx. 0.7V
Approx. 0.3V
Red
Approx. 0.3V
Horizontal sync signal
Burst signal (should be flat)

Fig. 8-2. Color Bar Signal of Pattern Generator

8-1-5. Alignment Tape

The following table lists available alignment tapes.
Use the tape specified in the signal column for each adjustment.

If the tape type is not specified for adjustments using tapes to check operations, use whichever tape for checking operations.

Name	Recording Mode	Tape Type	Tape Speed	Recording Contents		Uses
				Video Area	PCM Area	
Tracking WR5-1NP	L	MP	SP	CH2: 1 MHz tape path adjusting signal		Tape path adjustment Switching position adjustment
Video frequency characteristics WR5-7NE	E	ME	SP	RF sweep 0 to 15 MHz Marker 2, 4.5, 7, 8.5, 10 MHz		Adjusting frequency characteristics
Checking operations (SP mode) WR5-5NSP	L	MP	SP	• Video signal Color bar 4 minutes Monoscope 4 minutes • Audio signal (AFM) 400 Hz 60% modulation	• Audio signal (PCM) Monoscope section 20Hz, 20 sec. 400Hz, 20 sec. 14kHz, 20 sec. } Repeated 4 times Color bar section 1 kHz, 4 minutes	Checking operations
Checking operations (LP mode) WR5-4NL	L	MP	LP	• Video signal Color bar 4 minutes Monoscope 4 minutes • Audio signal (AFM) 400 Hz 60% modulation		
Checking operations (Hi8 SP mode) WR5-8NSE	E	ME	SP	• Video signal Color bar 4 minutes Monoscope 4 minutes • Audio signal (AFM) 400 Hz 60% modulation	• Audio signal (PCM) 400 Hz	
Checking AFM stereo operations WR5-9NS	L	MP	SP	• Video signal Color bar 4 minutes Monoscope 4 minutes • Audio signal (AFM) Stereo section (Color bar) Lch: 400 Hz, Rch: 1 kHz (L+R: 1.5 MHz ± 60 kHz DEV L–R: 1.7 MHz ± 30 kHz DEV) Bilingual section (Monoscope) MAIN: 400 Hz (1.5 MHz ± 60 kHz DEV) SUB: 1 kHz (1.7 MHz ± 30 kHz DEV)	• Audio signal (PCM) 400 Hz, 8 minutes	Checking AFM stereo operations

Note: Recording mode

L	Conventional mode
E	Hi8 (Hi-band) mode

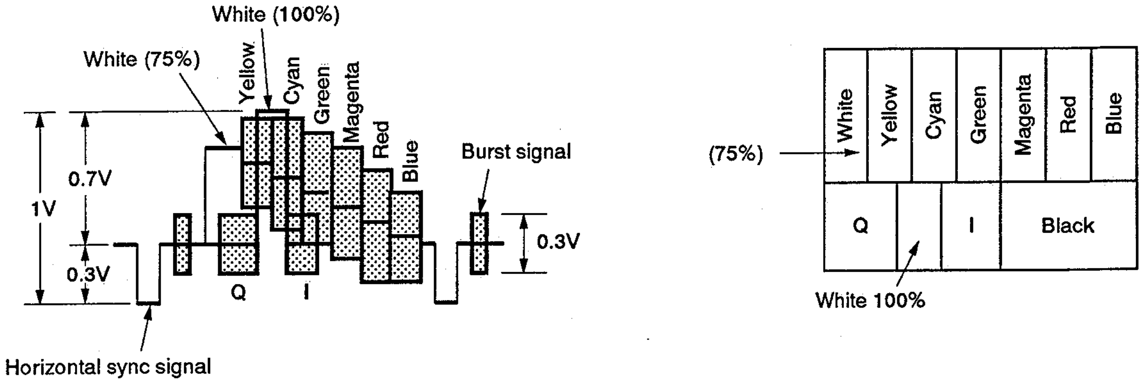
Tape types

MP	Metal particle tape
ME	Metal evaporated tape

Table 8-1.

The 75% color bar signal recorded on the alignment tape is shown in Fig. 8-3.

Note: Measured at the video input/output terminal (terminated at 75 Ω)


White (100%)
White (75%)
Yellow
Cyan
Green
Magenta
Red
Blue
Burst signal
0.7V
1V
0.3V
0.3V
Q
I
Horizontal sync signal
(75%)
White
Yellow
Cyan
Green
Magenta
Red
Blue
Q
I
Black
White 100%

Color bar signal waveform

Color bar pattern

Fig. 8-3. Alignment Tape Color Bar Signal

8-1-6. Input/Output Level and Impedance

Video input	Pin jack Input signal: 1 Vp-p, 75Ω unbalanced, sync negative
Video output	Pin jack Output signal: 1 Vp-p, 75Ω unbalanced, sync negative
Audio input	Pin jack Input level: –7.5 dBs (0 dBs=0.775 Vrms) Input impedance: Above 47 kΩ
Audio output	Pin jack Standard output: –7.5 dBs Output impedance: Below 10 kΩ

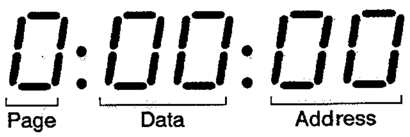
8-1-7. Service Mode

1. Service Mode Setting

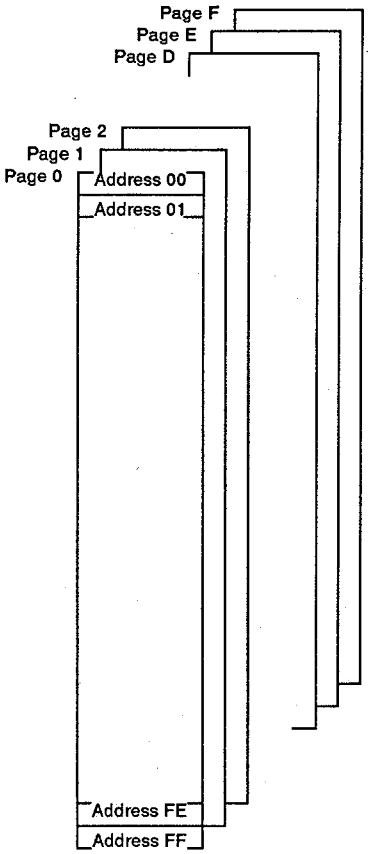
The service mode consists of the adjusting mode which adjusts the EVR and the test mode which displays the condition of the unit.

The unit can be set into the test mode and adjusting mode by connecting the adjusting remote commander (Set the HOLD switch to "HOLD").

LCD Display of the Adjusting Remote Controller

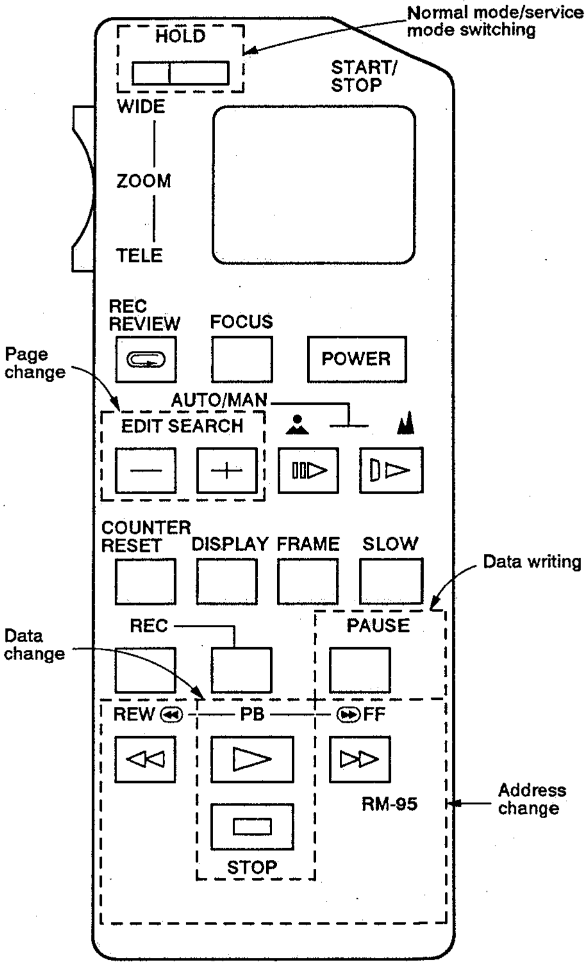

0:00:00
Page
Data
Address

(1) Service LANC memory map

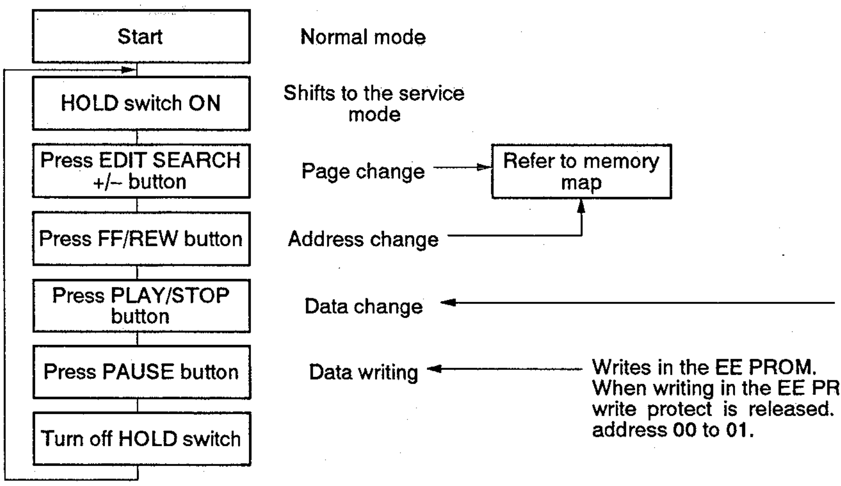

Page F
Page E
Page D
Page 2
Page 1
Page 0
Address 00
Address 01
Address FE
Address FF

Page	Page Division
0	
1	Shared by VTR section
2	Mode controller
3	Mechanism controller
4	
5	
6	
7	
8	
9	
A	
B	
C	EE-PROM
D	EE-PROM
E	
F	

Adjusting remote commander RM-95 (J-6082-053-A)


Normal mode/service mode switching
HOLD
START/ STOP
WIDE
ZOOM
TELE
REC REVIEW
FOCUS
POWER
Page change
AUTO/MAN
EDIT SEARCH
—
+
COUNTER RESET
DISPLAY
FRAME
SLOW
Data writing
REC
PAUSE
Data change
REW
PB
FF
RM-95
Address change
STOP

[Shifting to the service mode using the adjusting remote commander]


Start
Normal mode
HOLD switch ON
Shifts to the service mode
Press EDIT SEARCH +/– button
Page change
Refer to memory map
Press FF/REW button
Address change
Press PLAY/STOP button
Data change
Press PAUSE button
Data writing
Turn off HOLD switch

<During adjusting data change>
EVR value (RAM) changes to the data which was changed. (Writing can not be performed in the EE PROM.)

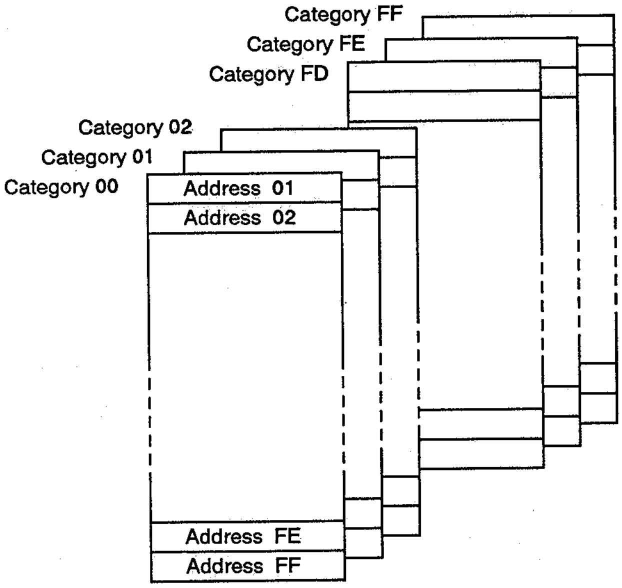
Writes in the EE PROM.
When writing in the EE PROM, writing cannot be carried out if the write protect is released. To release, set the data of page 1, address 00 to 01.

Command Name	Command Function	Normal LANC Command
Page Up	Page+1	Edit Search+
Page Down	Page–1	Edit Search –
Direct Page Set	Sets to the specified page	Event Clear
Address Up	Address+1	Fast Forward
Address Down	Address–1	Rewind
Data Up	Data+1	Play Back
Data Down	Data–1	Stop
Store	Writes data in the EEPROM, RAM	Pause

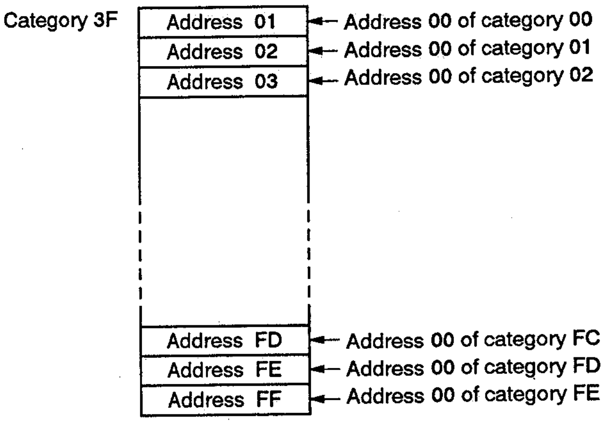
(2) Category Codes

This unit uses category codes for pages 2 and 3. The 256 addresses from 00 to FF are insufficient for the mode controller and mechanism controller to access the RAM. Therefore, new category codes have been used to seemingly increase addresses (Addresses 0000 to FFFF).

However, the data of address 00 are actually used as page numbers to form the 256 pages from 00 to FF, as shown in the following figure. These address 00 data are called category codes to discriminate them from the real page numbers. The new pages are called categories.


Category FF
Category FE
Category FD
Category 02
Category 01
Category 00
Address 01
Address 02
Address FE
Address FF

(Supplement) As each category no longer has address 00 as it is, this address cannot be accessed using the adjusting remote commander. Therefore, category 3F is used for accessing address 00.


Category 3F
Address 01
Address 02
Address 03
Address FD
Address FE
Address FF
Address 00 of category 00
Address 00 of category 01
Address 00 of category 02
Address 00 of category FC
Address 00 of category FD
Address 00 of category FE

(Example)

Specification of	Page 2	Category 01	Address 16

Page 2 is the mode controller

Page 3 is the mechanism controller

The actual category and address are specified by the adjusting remote commander as follows.

Order	Page	Address	Data	Procedure
1	2	00	01	Select category 01 using the data of page 2, address 00. From here onwards, category 01 will be selected at page 2 until the data of page 2, address 01 is rewritten.
2	2	16		As the data of page 2, address 00 is 01, select page 2, address 16 to select page 2, category 01, address 16. (The data of this address is the A/D conversion value of the input voltage of Pin (82) of the mode controller.)

2. Page D Write Protect

Release/set the page D write protect.

Page 1	Address 00

Data	Function
00	Normal (Write protect condition)
01	Write protect release

3. Test Mode Setting

Set/release various test mode. Release the protect (page: 1, address: 00, data: 01) before setting the data.

Page D	Address 01

Data	Function
00	Normal
01	Test mode 1 Various emergency prohibitions and releases Drum, capstan, loading motor, reel, tape top and end, DEW SP/LP automatic discrimination prohibition, manual switching 5 minutes pause release prohibition Power off prohibition/release by battery end
02	Test mode 2 Not used
03	Test mode 3 Track shift Performs the track shift playback Rear lock discrimination prohibition during PB SP/LP automatic discrimination prohibition, manual switching
04	Test mode 4 Rear lock mode Performs rear lock playback SP/LP automatic discrimination prohibition, manual switching

※ The data of these addresses can be recorded in the nonvolatile memory by pressing the PAUSE button on the adjusting remote commander. Take note that, in this case, the test mode will not be released even if the main power supply (6.5 Vdc) has been turned off.

※ Be sure to return the data of this address to 00 after adjustments/repairs.

4. Emergency code

Fault (error) symptoms can be checked.

Page D	Address 06

First emergency code

……The first error code generated

Page D	Address 07

Last emergency code

……The last error code generated (This data will be renewed each time an error occurs.)

※ Be sure to rewrite the data of addresses 06 and 07 to 00 after repairs/adjustments.

※ When rewriting the data, be sure to press the PAUSE button of the adjusting remote commander after setting the data.

Code	Error Condition
00	No error
01	Loading motor error
02	Reel error during unloading
03	Reel errors at other times
04	Capstan error
05	FG error during drum start up
06	PG error during drum start up
07	FG error when drum is normal
08	PG error when drum is normal
09	Phase error when drum is normal

5. Emergency mode

The operation mode set when the error occurred can be checked

Page D	Address 08

First emergency mode
……The operation mode set when the first error occurred

Page D	Address 09

Last emergency mode
……The operation mode set when the last error occurred
(This data will be renewed each time an error occurs.)

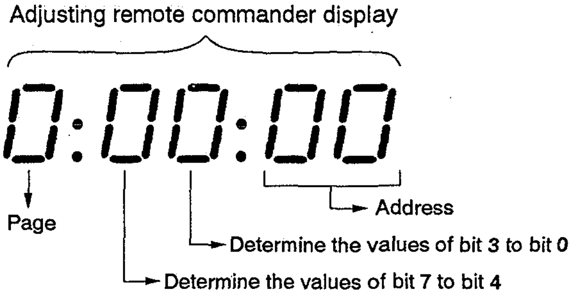
Code	Error Conditions
00	BEFOR INITIALIZE
01	EJECTED
02	NORMAL STOP
03	FF
04	NORMAL REC
06	NORMAL PB
07	PB PAUSE
12	LOADING
14	REC PAUSE
26	X1
27	1/5 SLOW
31	UNLOADING
36	–X1
37	–1/5 SLOW
46	CUE
47	1/10 SLOW
56	REVIEW
57	–1/10 SLOW
62	STOP TAPE END
66	X2
67	FRAME
72	STOP TAPE TOP
76	–X2
77	–FRAME
83	REWIND
85	REC REVIEW (+)
95	REC REVIEW (–)
A2	EMERGENCY STOP
A5	EDIT SEARCH(+)
B1	EMERGENCY UNLOADING
B2	STOP EMERGENCY 1
B5	EDIT SEARCH (–)
C2	STOP EMERGENCY 2
E2	STOP NO CASSETTE
F5	EDIT PAUSE

※ Be sure to rewrite the data of addresses 08 and 09 to 00 after repairs/adjustments.

※ When rewriting the data, be sure to press the PAUSE button of the adjusting remote commander after setting the data.

6. Bit Value Discrimination

Bit values must be discriminated using the display data of the adjusting remote commander for the following items. Use the table below to discriminate if the bit value is "1" or "0".


Adjusting remote commander display
0:00:00
Page
Address
Determine the values of bit 3 to bit 0
Determine the values of bit 7 to bit 4

Remote controller display	Bit value			
	bit 3 or bit 7	bit 2 or bit 6	bit 1 or bit 5	bit 0 or bit 4
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
Ⓐ→ 8	1	0	0	0
9	1	0	0	1
A(A)	1	0	1	0
B(b)	1	0	1	1
C(c)	1	1	0	0
D(d)	1	1	0	1
Ⓑ→ E(E)	1	1	1	0
F(F)	1	1	1	1

(Example) If the remote commander display data is "8E", bit values from bit 7 to bit 4 can be discriminated from column Ⓐ, and those from bit 3 to bit 0 from column Ⓑ.

7. Key input check

Page 2	Category 3F	Address 01

Bit	Key Switch	Condition of Switch
0		"1"=OFF "0"=ON
1	PACK DET	
2	Cassette eject (PE-13, S201)	
3	Power supply (PE-13, S202)	
4		
5		
6	CC DOWN (Mechanism section)	
7		

Using method:

Order	Page	Address	Data	Procedure
1	2	00	3F	Specification of category 3F
2	2	01		The on/off of each key switch can be discriminated by discriminating the bit values of the display data.

Page 2	Category 00	Address 0E

Bit	Switch	Condition of Switch
0		
1		
2		
3		
4		
5		
6	LINE STEREO	Audio input/output terminal (right), "1"=Connected, "0"=Open
7		

Using method:

Order	Page	Address	Data	Procedure
1	2	00	00	Specification of category 00
2	2	0E		The on/off of the switches can be discriminated by discriminating the bit values of the display data.

Page 2	Category 00	Address 1C

Bit	Switch	Condition of Switch
3	LCD ON/OFF (PE-13, S206)	"1"=ON, "0"=OFF

Using method:

Order	Page	Address	Data	Procedure
1	2	00	00	Specification of category 00
2	2	1C		The on/off of the switches can be discriminated by discriminating the bit values of the display data.

8. Key input check (A/D Port)

Page 2	Category 01	Address 16 – 18

Display Data Address	Approx. 00	Approx. 2D	Approx. 4C	Approx. 70	Approx. 8E	Approx. B2	Approx. FF
16 (KEY AD IN 0 IC201 (82))	REC (FU-109, S301)	STOP (FU-109, S302)	FF (FU-109, S303)	PLAY (FU-109, S304)	SLOW (FU-109, S305)		No key input
17 (KEY AD IN 1 IC201 (83))	PAUSE (FU-109, S306)	REW (FU-109, S307)	COUNTER RESET (PE-13, S203)	DATA SCREEN (PE-13, S204)			No key input
18 (KEY AD IN 2 IC201 (84))	VOLUME + (VR-39, S501)	VOLUME – (VR-39, S502)	BRIGHT+ (VR-39, S503)	BRIGHT – (VR-39, S504)	MENU (VR-39, S505)	ENTER (VR-39, S506)	No key input

Using method:

Order	Page	Address	Data	Procedure
1	2	00	01	Specification of category 01
2	2	16–18		The key pressed can be discriminated by the display data of each address.

9. Battery voltage check

Page 3	Category 02	Address 10

Display Data	Battery Voltage
FF	Approx. 10 Vdc
F0	Approx. 9.4 Vdc
E0	Approx. 8.8 Vdc
D0	Approx. 8.2 Vdc
C0	Approx. 7.5 Vdc
B0	Approx. 6.9 Vdc
A0	Approx. 6.3 Vdc
90	Approx. 5.6 Vdc
80	Approx. 5.0 Vdc

Using method:

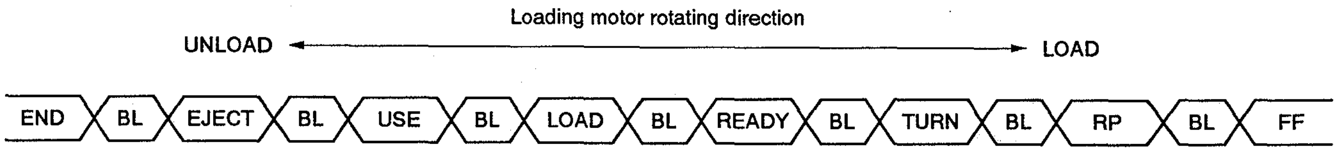
Order	Page	Address	Data	Procedure
1	3	00	02	Specification of category 02
2	3	10		The battery voltage can be discriminated by the display data.

10. Mechanism section switch, etc. check

Page 2	Category 00	Address 86

Bit	Switch, etc.	Condition
0	HG/$\overline{\text{NOR}}$	"1"=Hi8 MP tape, "0"=Others
1	E DET	"1"=Hi8 mode playback, "0"=Others
2	ME/$\overline{\text{MP}}$ SW	"1"=ME tape, "0"=MP tape
3	REC PROOF	"1"=Recording prohibited, "0"=Recording possible
4		
5	MODE SW 2	Refer to the following table.
6	MODE SW 1	
7	MODE SW 0	

Display Data	MODE SW 0	MODE SW 1	MODE SW 2	Mechanism Position	Function	$\overline{\text{CC DOWN}}$
0	0	0	0	BL	Interval between each position	
6	0	1	1	END	FULL END processing (Releasing the T side lock.)	1
2	0	0	1	EJECT	Eject position of cassette compartment	1
A	1	0	1	USE	EJECTED (Unskate end)	1
2	0	0	1	LOAD	LOADING (Skate in)	0
8	1	0	0	READY	NORMAL STOP position	0
C	1	1	0	TURN	Only pinch roller turns off during PB ↔ REV (oscillating position)	0
4	0	1	0	RP	PB, REC, RVS, REV, REW, CUE	0
0	0	0	0	FF	FF	0



Using method:

Order	Page	Address	Data	Procedure
1	2	00	00	Specification of category 00
2	2	86		The mode switch position can be discriminated by the upper digit of the display data. The condition of each switch can be discriminated by the bit value of the lower digit.

11. Mechanism controller input/output check

Page 2	Category 00	Address 85

Bit	I/O Signal	Condition
0	PB LP/SP DET	"1"=LP playback, "0"=Others
1	SYNC DET	"1"=VTR SYNC present, "0"=No VTR SYNC
2	REC CLOG	"1"=Clog occurred, "0"=Others
3		
4	JOG	"1"=Variable speed playback, "0"=Others
5	VA PB MODE	"1"=Playback mode, "0"=E-E mode
6	AUDIO MUTE	"1"=Mute, "0"=Audio output
7	VIDEO MUTE	"1"=Mute, "0"=Video output

Using method:

Order	Page	Address	Data	Procedure
1	2	00	00	Specification of category 00
2	2	85		The condition of each input/output signal can be discriminated by the bit value of the display data.

12. Mechanism controller A/D Port input voltage check

Page 3	Category 02	Address 14

Display Data	A/D Port Input Voltage
00 to FF	Approx. 0 Vdc to approx. 5 Vdc

Using method:

<table>
<tr><th>Order</th><th>Page</th><th>Address</th><th>Data</th><th>Procedure</th></tr>
<tr><td>1</td><td>3</td><td>00</td><td>02</td><td>Specification of category 02</td></tr>
<tr><td>2</td><td>3</td><td>0E</td><td>02</td><td>Permission for A/D conversion operations</td></tr>
<tr><td>3</td><td>3</td><td>13</td><td></td><td>Set the data according to the following table, and specify the A/D port of the mechanism controller.
<table>
<tr><th>Data</th><th>Mechanism Controller Port</th></tr>
<tr><td>00</td><td>Pin (60);AN0, T REEL FG</td></tr>
<tr><td>01</td><td>Pin (59);AN1, S REEL FG</td></tr>
<tr><td>02</td><td>Pin (58);AN2, ATF ERROR</td></tr>
<tr><td>03</td><td>Pin (57);AN3, BATT SENS</td></tr>
<tr><td>04</td><td>Pin (56);AN4, $\overline{\text{DEW DET}}$</td></tr>
<tr><td>05</td><td>Pin (55);AN5, TAPE TOP</td></tr>
<tr><td>06</td><td>Pin (54);AN6, TAPE END</td></tr>
</table></td></tr>
<tr><td>4</td><td>3</td><td>14</td><td></td><td>The A/D port input voltage can be discriminated according to the display data.</td></tr>
</table>

13. Tape top/end sensor check

Page 3	Category 02	Address 0A

Display Data	Tape Top/End Sensor Condition
0 0	Tape present (Middle of tape)
0 1	Tape top
1 0	Tape end
1 1	No tape

Tape end sensor condition
Tape top sensor condition
"0"=Non active (Not receiving light)
"1"=Active (Receiving light)

Using method:

Order	Page	Address	Data	Procedure
1	3	00	02	Specification of category 02
2	3	0E	10	Request for tape top/end sampling operations
3	3	0A		The condition of the tape top/end sensor can be discriminated by the display data.

14. Individual operations of drum, capstan, and loading motor

Page 2	Category 02	Address 11

Data	Operations
00	Normal
02	Drum in normal rotation
04	Drum in reverse rotation
06	Capstan in normal rotation
08	Capstan in reverse rotation
0A	Loading motor in normal rotation
0C	Loading motor in reverse rotation
01	All motors stop
03	
05	
07	
09	
0B	
0D	
0F	

Using method:

Order	Page	Address	Data	Procedure
1	3	00	02	Specification of category 02
2	3	0E	01	Permission for individual operations of motor
3	3	11		The motor can be operated individually by setting the data indicated above.
4				Turn off the main power supply (6.3 Vdc).

15. Page D Address List

Address	Name	Function ( ) contains the adjustment voltage output terminal	Adjustment data	
			Initial level	Memo column
00	Category code		00	00
01	Test mode		00	00
02			05	05
03	BATT END DATA	Battery end adjustment	80	
04	SW POS ADJ DATA LOW	Switching position adjustment (Fine adjustment)	80	
05	SW POS ADJ DATA HIGH	Switching position adjustment (Rough adjustment)	0A	
06	EMERGENCY CODE FIRST	Error codes and modes are recorded in the memory. Rewrite the data of these addresses to 00 after repairs/adjustments.	00	00
07	EMERGENCY CODE LAST		00	00
08	EMERGENCY MODE FIRST		00	00
09	EMERGENCY MODE LAST		00	00
0A	VIDEO DATA MP SP	CXA1207 serial data	6A	6A
0B	VIDEO DATA MP LP	CXA1207 serial data	55	55
0C	VIDEO DATA MP SP HI8	CXA1207 serial data	6A	6A
0D	VIDEO DATA MP LP HI8	CXA1207 serial data	55	55
0E	VIDEO DATA ME SP	CXA1207 serial data	6A	6A
0F	VIDEO DATA ME LP	CXA1207 serial data	55	55
10	VIDEO DATA ME SP HI8	CXA1207 serial data	6A	6A
11	VIDEO DATA ME LP HI8	CXA1207 serial data	55	55
12	VIDEO DATA EDIT	CXA1207 serial data	6A	6A
13	VIDEO DATA EDIT HI8	CXA1207 serial data	55	55
14 to 17		Not used		
18	SLOW TRACON SP	"Slow tracking adjustment (SP mode)" (Note 1)	00	00
19	SLOW TRACON LP	"Slow tracking adjustment (LP mode)" (Note 1)	00	00
1A	HP VOL	"Volume" adjustment center value (IC206 ③)	80	80
1B	BRIGHT	"Brightness" adjustment center value(IC906 ⑤)	80	80
1C	COLOR	"Color" adjustment (IC906 ⑨) (Note 1)	80	80
1D	HUE	"Hue" adjustment (IC906 ⑫) (Note 1)	80	80
1E	MENU DATA 1	(Note 1)	00	00
1F	MENU DATA 1	(Note 1)	00	00
20	SET VARIATION		00	00
21	ADJUST MODE		00	00
22 to 2C		Not used		
2D	BATT REMAIN LOW	Battery end adjustment	95	
2E	BATT REMAIN MIDDLE	Battery end adjustment	9B	
2F	BATT REMAIN FULL	Battery end adjustment	9F	
30	REC C	REC C level adjustment (IC705 ⑧)	B0	
31 to 35		Not used		
36	M TUNE 1CH	Playback frequency characteristics adjustment (IC206 ⑤)	AA	
37 to 3D		Not used		
3E	M TUNE 2CH	Playback frequency characteristics adjustment (IV206 ⑥)	AA	
3F to 47		Not used		
48	RF CONT ME		AB	AB
49	RF CONT MP		C7	C7

Table 8-2 (1).

Note 1: User control (Adjust or set on the menu display.)

Address	Name	Function ( ) contains the adjustment voltage output terminal	Adjustment data	
			Initial level	Memo column
4A	SYNC AGC	SYNC AGC adjustment (IC705 ⑱)	7A	
4B		Not used		
4C	C COMB ADJUST	Y/C separation adjustment (IC705 ②)	AA	
4D	IR	IR adjustment (IC705 ②)	AA	
4E	CAR HI8	(IC705 ④)	50	50
4F	CAR	Y FM carrier frequency adjustment (IC705 ④)	A5	
50	DEVIATION HI8	(IC705 ⑤)	50	50
51	DEVIATION	Y FM deviation adjustment (IC705 ⑤)	90	
52	REC Y HI8 ME	(IC705 ⑥)	D0	D0
53	REC Y HI8 MP	(IC705 ⑥)	D0	D0
54	REC Y	REC Y level adjustment (IC705 ⑥)	A0	
55		Not used		
56	REC Y PB		00	00
57	DEEMPH Y REC		90	90
58	DEEMPH Y PB	DEEMPH Y level adjustment (IC705 ⑦)	70	
59		Not used		
5A	EMPH/PB Y REC	EMPH Y level adjustment (IC705 ③)	A5	
5B	EMPH/PB Y PB	PB Y level adjustment (IC705 ③)	AA	
5C to 63		Not used		
64	PILOT CONT ME		C0	C0
65	PILOT CONT MP		90	90
66		Not used		
67	PAL JOG	Not used (IC705 ⑨)	FF	FF
68 to 77		Not used		
78	1.5 DEV PB	1.5 MHz playback level adjustment (IC206 ⑲)	A0	
79	1.7 DEV PB	1.7 MHz playback level adjustment (IC206 ②)	80	
7A	1.5 IR	1.5 MHz carrier frequency adjustment (IC206 ⑱)	A0	
7B	1.5 DEV REC	1.5 MHz deviation adjustment (IC206 ⑲)	80	
7C	1.7 IR	1.5 MHz carrier frequency adjustment (IC206 ④)	A0	
7D	1.7 DEV REC	1.5 MHz deviation adjustment (IC206 ②)	80	
7E to 83		Not used		
84	R BRT	R sub-bright adjustment (IC906 ②)	A8	
85	G BRT	G sub-bright adjustment (IC906 ③)	A8	
86	B BRT	B sub-bright adjustment (IC906 ④)	A8	
87	B COM	B sub-bias adjustment (IC906 ⑥)	A8	
88	R COM	R sub-bias adjustment (IC906 ⑦)	A8	
89	COM	RGB bias adjustment (IC906 ⑧)	A8	
8A	GAIN	Contrast adjustment (IC906 ⑲)	A8	
8B	R GAIN	R contrast adjustment (IC906 ⑱)	A8	
8C	B GAIN	B contrast adjustment (IC906 ⑬)	A8	
8D	CAP FG DUTY	CAF FG duty adjustment (IC206 ⑧)	80	
8E	(RF CONT ME)	Not used		
8F	(RF CONT MP)	Not used		

Table 8-2 (2).

Address	Name	Function ( ) contains the adjustment voltage output terminal	Adjustment data	
			Initial level	Memo column
90	(PILOT CONT ME)	Not used		
91	(PILOT CONT MP)	Not used		
92	HP VOL	"Volume" adjustment value (IC206 ③)	80	80
93	BRIGHT	"Brightness" adjustment value (IC906 ⑤)	80	80
94	COLOR	"Color" adjustment value (IC906 ⑨)	80	80
95	HUE	"Hue" adjustment value (IC906 ⑫)	80	80
96 to FF		Not used		

Table 8-2 (3).

Note 2: The adjustment data initial value is the data input before performing video section adjustments (Page D) if the data of Page D has been erased due to some reason.

Note 3: The data written in the adjustment data memo column are fixed.
After adjusting, check that these data have not been rewritten by mistake.

8-2. ELECTRICAL SYSTEM ADJUSTMENTS

1. Oscillation frequency check (MA-137 board)

Mode	E-E
Measurement Point	Q001 collector
Measuring Instrument	Frequency counter
Specified Value	1000 ± 30 kHz

2. Power supply voltage check (MA-137 board)

Mode	E-E
Measuring Instrument	Digital voltmeter
SW 5V check	
Measurement Point	Pins ⑭ and ⑮ of W001
Specified Value	4.95 ± 0.2 Vdc
13V check	
Measurement Point	Pin ① of CN016
Specified Value	13.0 ± 0.5 Vdc
–8V check	
Measurement Point	Pin ④ of CN016
Specified Value	–8.0 ± 0.5 Vdc
–20V check	
Measurement Point	Pin ① of CN015
Specified Value	–20 ± 1 Vdc
DRUM VS check	
Measurement Point	Pin ⑬ of IC103
Specified Value	1.5 ± 0.3 Vdc (Note)
CAPSTAN VS check	
Measurement Point	Pin ㉙ of CN004
Specified Value	2.0 ± 0.3 Vdc (Note)

Note: The voltages of the drum and capstan servo will change according to tape and load conditions.

8-3. SYSTEM CONTROL SYSTEM ADJUSTMENT

1. EEPROM data input

If the data of page D has been erased due to some reason, input data to this page before adjusting. Refer to the "Page D address list" in "8-1-7. Service Mode" for the data of page D.

(1) Page D data input

Mode	E-E
Signal	Arbitrary
Adjustment Page	D
Adjustment Address	00 to 95

Inputting method:

1) Release the write protect.
   Page: 1, address: 00, data: 01
2) Select page D, and input the initial value to each address. (After setting the data (initial value), be sure to press the PAUSE button of the adjusting remote commander before changing the address.)

2. Battery end adjustment

Mode	Record (SP)
Signal	Arbitrary
Measurement Point	LCD display of adjusting remote commander
Measuring Instrument	
Adjustment Page	D
Adjustment Address	03 (BATT END DATA)

Connection:

1) Connect the regulated power supply and digital voltmeter as shown in Fig. 8-4.

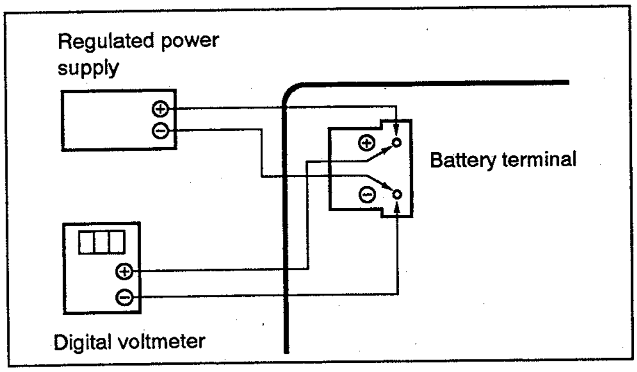


Fig. 8-4.

Adjusting method:

1) Adjust the output voltage of the regulated power supply so that the digital voltmeter display becomes 6.5 ± 0.1 Vdc.
2) Set the record mode.
3) Release the protect.
   Page: 1, address: 00, data: 01
4) Set data: 01 to page: D, address: 01.
   (Setting test mode 1.)
5) Lower the output voltage of the regulated power supply so that the digital voltmeter display becomes 5.50 ± 0.01 Vdc.
6) Select page: 3, address: 00, and set data: 02.
   (Specifying category 02.)
7) Select page: 3, address: 10, read the display data of the adjusting remote commander, and take it as D_{03}.
8) Set data: D_{03} to page: D, address: 03, and press the PAUSE button of the adjusting remote commander.
9) Convert D_{03} to a decimal numeral to obtain D_{03}'.
10) Calculate the adjustment data (decimal numeral) from the following equation (decimal calculation), convert it to a hexadecimal numeral, and input to each adjustment address.
    Address: 2D $D_{2D}'=D_{03}'+15$
    Address: 2E $D_{2E}'=D_{03}'+19$
    Address: 2F $D_{2F}'=D_{03}'+21$
    Note: Be sure to press the PAUSE button of the adjusting remote commander after setting each data.
11) Set data: 00 to page: D, address: 01.
    (Releasing test mode 1)
12) Perform "Battery down check".

3. Battery down check

Mode	Tuner record
Signal	Arbitrary

Connection:

1) Connect the regulated power supply and digital voltmeter as shown in Fig. 8-4.

Checking method:

Remove the adjusting remote commander, and check as follows. If unsatisfactory, re-adjust.

1) Adjust the output voltage of the regulated power supply so that the display of the digital voltmeter becomes 6.5 ± 0.1 Vdc.
2) Set the tuner recording mode.
3) Lower the output voltage of the regulated power supply so that the display of the digital voltmeter becomes 5.75 ± 0.01 Vdc.
4) Check that the power lamp is not blinking.
5) Lower the output voltage of the regulated power supply so that the display of the digital voltmeter becomes 5.55 ± 0.01 Vdc.
6) Check that the power lamp blinks every second.
7) Lower the output voltage of the regulated power supply so that the display of the digital voltmeter becomes 5.45 ± 0.01 Vdc.
8) Check that the power lamp blinks faster, the VTR stops, and the power supply turns off.

8-4. SERVO SYSTEM ADJUSTMENTS

1. Switching position adjustment (RP-144 board)

Mode	Playback
Signal	Alignment tape: For adjusting tracking (WR5-1NP)
Measurement Point	CH1: Pin ③ of CN053 (RF SWP) CH2: Pin ② of CN053 (V RF OUT)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	04 (SW POS ADJ DATA LOW) 05 (SW POS ADJ DATA HIGH)
Specified Value	t_1=0 ± 5 µsec.

Adjusting method:

1) Release the protect.
   Page: 1, address: 00, data: 01
2) Set data: 80 to page: D, address: 04.
3) Change the data of address: 05 (for rough adjustment) and address: 04 (for fine adjustment) of page: D, and adjust the switching position (t_1) to the specified value.
   Note: Be sure to press the PAUSE button of the adjusting remote commander before changing the address. If not, the new data will not be written in the memory.
4) Press the PAUSE button of the adjusting remote commander.

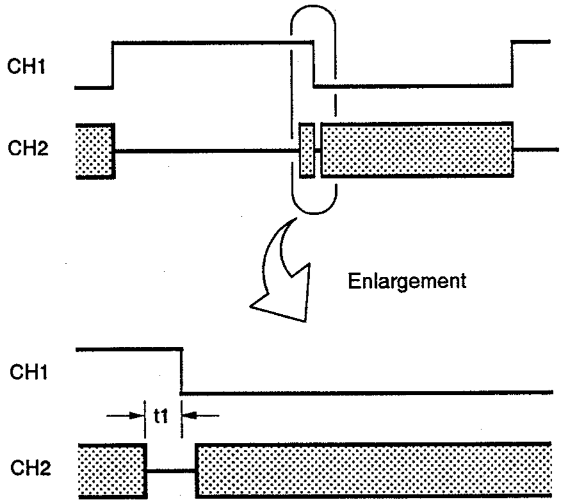


Fig. 8-5.

2. CAP FG duty adjustment (RP-144 board)

Mode	Record (SP)
Signal	Color bar
Measurement Point	Pin ④ of CN053 (CAP FG)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	8D (CAP FG DUTY)
Specified Value	Duty=50 ± 1%

Adjusting method:

1) Release the protect.
   Page: 1, address: 00, data: 01
2) Set data: 80 to page: D, address: 8D.
3) Change the data of page: D, address: 8D, and adjust the CFG waveform duty to the specified value.
4) Press the PAUSE button of the adjusting remote commander.

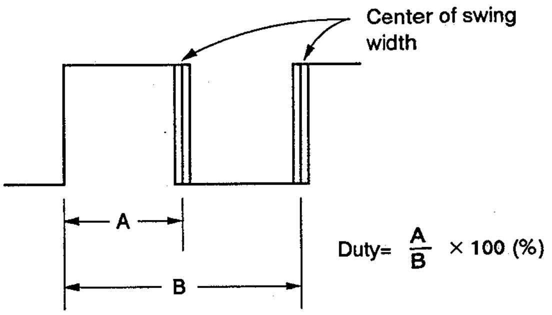


Fig. 8-6.

8-5. VIDEO ADJUSTMENTS

Basically, the video system must be adjusted according to the following adjustment procedures.
The color video signal supplied from the pattern generator is used as the video input signal for adjusting the video system in the recording mode. Check that the sync signal and the color burst signal satisfy the specifications specified for the set-up for adjustments shown in Fig. 8-2.

[Adjusting Procedure]

1) Playback frequency characteristics adjustment
2) Flying erase check
3) VXO oscillation frequency check
4) SYNC AGC adjustment
5) IR adjustment
6) Y/C separation adjustment
7) EMPH Y level adjustment
8) DE EMPH Y level adjustment
9) PB Y level adjustment
10) Y FM carrier frequency adjustment
11) Y FM deviation adjustment
12) Chroma emphasis f0 adjustment
13) REC Y level adjustment
14) REC C level adjustment
15) REC ATF level check

1. Playback frequency characteristics adjustment (RP-144 board)

Note: [ ] contains the adjusting element of CH2.

Mode	Playback
Signal	Alignment tape: For adjusting frequency characteristics (WR5-7NE)
Measurement Point	CH1: Pin ② of CN053 (V RF OUT) External trigger: Pin ③ of CN053 (RF SWP)
Measuring Instrument	Oscilloscope TRIG. SLOW: +[–]
Adjustment Page	D
Adjustment Address	36 (M TUNE 1CH) [3E (M TUNE 2CH)]
Specified Value	4.5 MHz level: 7 MHz level= 40:(34 ± 2)

Adjusting method:

1) Release the protect.
Page: 1, address: 00, data: 01
2) Change the data of page: D, address: 36 [address: 3E], and adjust the 4.5 MHz and 7 MHz level ratio of the PB RF output waveform to the specified value.
3) Press the PAUSE button of the adjusting remote commander.

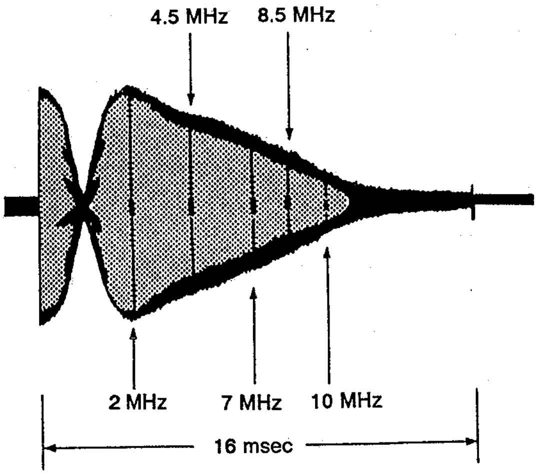


Fig. 8-7.

2. Flying erase check (RP-144 board)

Mode	Record
Signal	Arbitrary
Measurement Point	Pin ② of CN052 (FE (X))
Measuring Instrument	Oscilloscope and frequency counter
Specified Value	Frequency: Above 7.8 ± 0.7 MHz Voltage: Above 7.0 Vp-p

Note: Use a MP type tape.

Checking method:

1) Check that the oscillating frequency is 7.8 ± 0.7 MHz, and that the oscillating voltage is above 7.0 Vp-p.

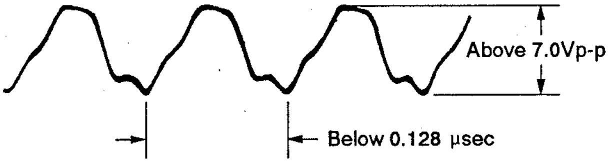


Fig. 8-8.

3. VXO oscillating frequency check (MA-137 board)

Mode	Playback
Signal	Color bar
Measurement Point	Q801 emitter
Measuring Instrument	Frequency counter
Specified Value	3579545 ± 150 Hz

Note: Connect the frequency counter via a high impedance (Approx. 10 MΩ) and low capacity buffer (below 10 pF).

Adjusting method:

1) Check that the fsc signal frequency is 3579545 ± 150 Hz.

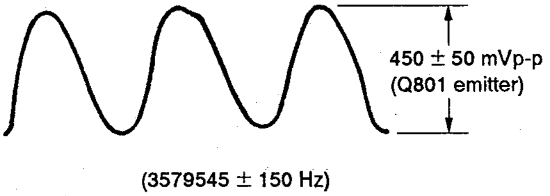


Fig. 8-9.

4. SYNC AGC level adjustment (MA-137 board)

Mode	Record
Signal	Color bar
Measurement Point	Pin ⑦ of IC707 (Pin ⑳ of CN007)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	4A (SYNC AGC)
Specified Value	A=0.50 ± 0.02 V

Adjusting method:

1) Release the protect.
   Page: 1, address: 00, data: 01
2) Change the data of page: D, address: 4A, and adjust the Y signal level (A) to the specified value.
3) Press the PAUSE button of the adjusting remote commander.

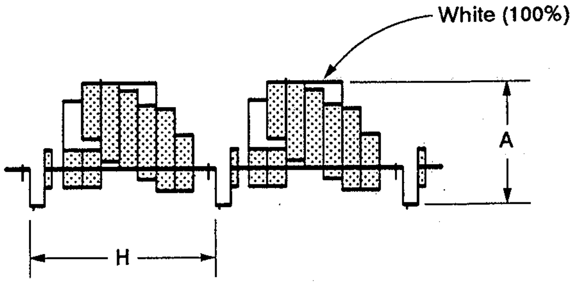


Fig. 8-10.

5. IR adjustment (MA-137 board)

Mode	Record
Signal	Color bar
Measurement Point	Pin ⑦ of IC701 (Y COMB OUT)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	4D (IR)
Specified Value	Minimum residual chroma component (A) (Below 60 mVp-p)

Connection:

1) Connect Pin ⑭ of IC701 (or Pin ② of IC703) to Pin (51) of IC701 with a jumper wire.

Adjusting method:

1) Release the protect.
   Page: 1, address: 00, data: 01
2) Change the data of page: D, address: 4D, and minimize the residual chroma component (A).
3) Press the PAUSE button of the adjusting remote commander.

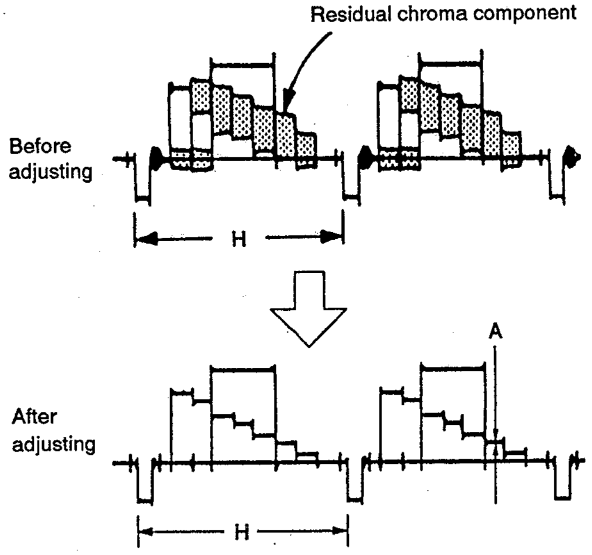

Residual chroma component
Before adjusting
H
A
After adjusting
H

Fig. 8-11.

6. Y/C separation adjustment (MA-137 board)

Mode	Record
Signal	Color bar
Measurement Point	Pin ⑪ of IC701 (C+CD)
Measuring Instrument	Oscilloscope
Adjusting Element	RV701 (phase)
Adjustment Page	D
Adjustment Address	4C (C COMB ADJUST)
Specified Value	Minimum residual chroma component (A)

Adjusting method:

1) Release the protect.
   Page: 1, address: 00, data: 01
2) Change the data of page: D, address: 4C, and minimize the residual chroma component.
3) Minimize the residual chroma component (A) with RV701.
4) Repeat until the specifications in steps 2) and 3) are satisfied.
5) Press the PAUSE button of the adjusting remote commander.

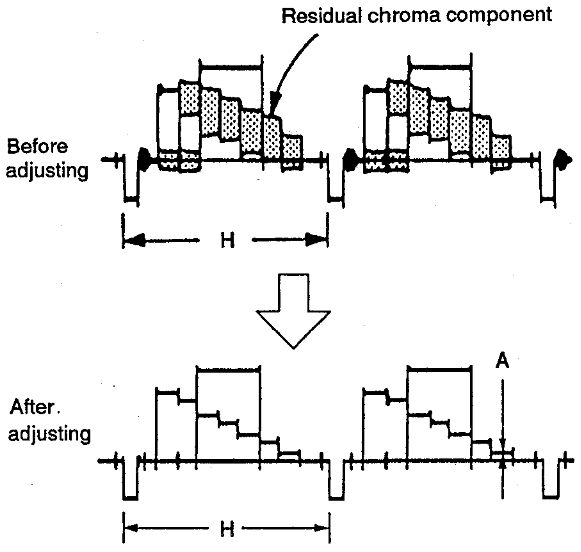

Residual chroma component
Before adjusting
H
A
After adjusting
H

Fig. 8-12.

7. EMPH Y level adjustment (MA-137 board)

Mode	Record
Signal	Color bar
Measurement Point	Pin ⑤ of IC702 (or Pin ③ of IC701)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	5A (EMPH Y)
Specified Value	A=0.50 ± 0.02V

Adjusting method:

1) Release the protect.
   Page: 1, address: 00, data: 01
2) Change the data of page: D, address: 5A, and adjust the Y signal level (A) to the specified value.
3) Press the PAUSE button of the adjusting remote commander.

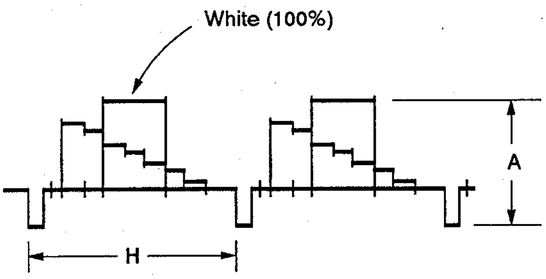


Fig. 8-13.

8. DE EMPH Y level adjustment (MA-137 board)

Mode	Playback
Signal	Alignment tape: For checking operations Color bar section • Normal mode WR5-5NSP • Hi8 mode WR5-8NSE
Measurement Point	Pin ㉑ of IC701
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	58 (DE EMPH)
Specified Value	A=0.50 ± 0.02V

Adjusting method:

1) Release the protect.
   Page: 1, address: 00, data: 01
2) Play back the color bar section of the normal mode alignment tape (WR5-5NSP).
3) Change the data of page: D, address: 58, and adjust the Y signal level (A) to the specified value.
4) Press the PAUSE button of the adjusting remote commander.
5) Play back the color bar section of the Hi8 mode alignment tape (WR5-8NSE).
6) Check that the Y signal level (A) is 0.50 ± 0.02V.

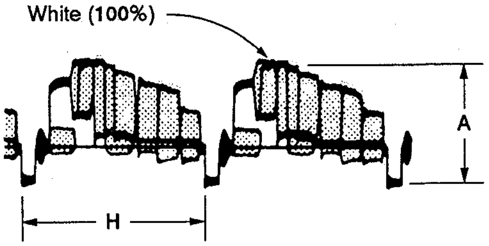


Fig. 8-14.

9. PB Y level adjustment

Mode	Playback
Signal	Alignment tape: For checking operations (WR5-5NSP) Color bar section
Measurement Point	Video input/output terminal (Terminated at 75Ω)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	5B (PB Y)
Specified Value	A=1.0 ± 0.05V

Adjusting method:

1) Release the protect.
   Page: 1, address: 00, data: 01
2) Change the data of page: D, address: 5B, and adjust the video signal level (A) to the specified value.
3) Press the PAUSE button of the adjusting remote commander.

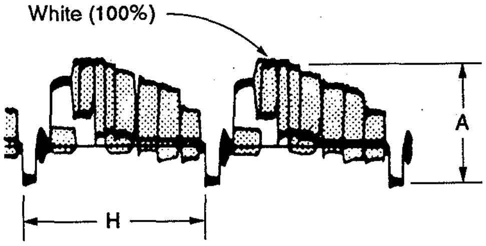


Fig. 8-15.

10. Y FM carrier frequency adjustment (MA-137 board)

Mode	Record
Signal	No signal
Measurement Point	Pin ① of CN013 (REC Y)
Measuring Instrument	Frequency counter
Adjustment Page	D
Adjustment Address	4F (CAR)
Specified Value	4.38 ± 0.02 MHz

Adjusting method:

1) Release the protect.
   Page: 1, address: 00, data: 01
2) Change the data of page: D, address: 4F, and adjust the Y FM carrier frequency to the specified value.
3) Press the PAUSE button of the adjusting remote commander.
4) Perform the "Deviation adjustment".

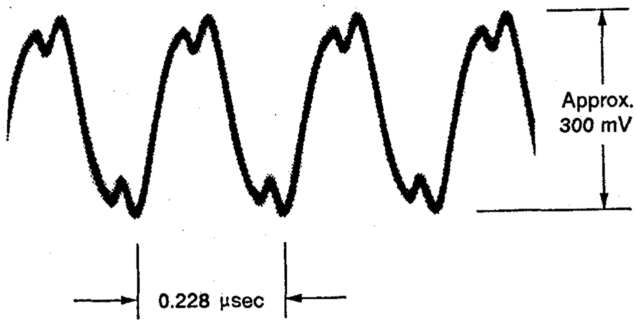


Fig. 8-16.

11. Y FM deviation adjustment (MA-137 board)

Mode	Record and playback
Signal	Color bar
Measurement Point	Pin ㉑ of IC701
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	51 (DEV)
Specified Value	A=0.50 ± 0.02V

Note: Check that the "DE EMPH Y level adjustment", and "Y FM carrier frequency adjustment" have been completed.

Adjusting method:
1) Release the protect.
   Page: 1, address: 00, data: 01
2) Record the color bar signal.
3) Play back the recorded signal.
4) Check the playback signal level (A).
   Specification: A=0.50 ± 0.02V
5) If the specification has not been satisfied, change the data of page: D, address: 51, and repeat steps 2) to 4).

Playback signal level	Changing the data
When smaller than the specified value	Increase
When greater than the specified value	Decrease

6) Press the PAUSE button of the adjusting remote commander.

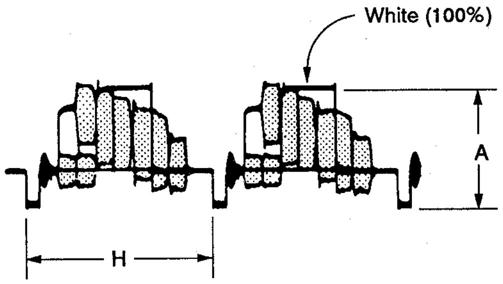


Fig. 8-17.

12. Chroma emphasis fo adjustment (MA-137 board)

Mode	Record
Signal	Color bar
Measurement Point	Pin ㉔ of IC801
Measuring Instrument	Oscilloscope
Adjustment Page	FL801
Adjustment Address	Minimum fo component

Connection:
1) Connect a 3.3 kΩ resistor (1-249-423-11) between Pin ㉔ of IC801 and the GND.

Adjusting method:
1) Minimize the amplitude of the latter section of the yellow part of the chroma signal with FL801.

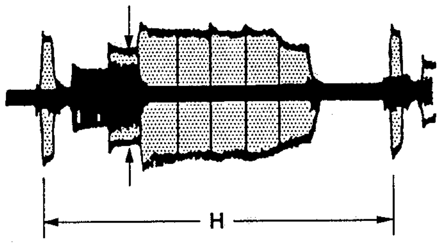

Minimize the amplitude of the latter section of the yellow part.

Fig. 8-18.

13. REC Y level adjustment (MA-137 board)

Mode	Record
Signal	No signal
Measurement Point	Pin ① of CN013 (REC Y)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	54 (REC Y)
Specified Value	A=280 ± 10 mVp-p

Adjusting method:

1) Release the protect.
   Page: 1, address: 00, data: 01
2) Change the data of page: D, address: 54, and adjust the Y signal level (A) to the specified value.
3) Press the PAUSE button of the adjusting remote commander.

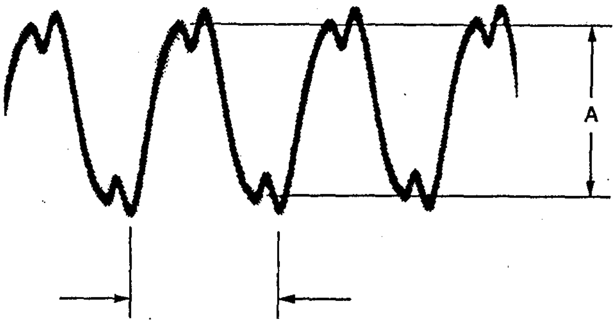


Fig. 8-19.

14. REC C level adjustment (MA-137 board)

Mode	Record
Signal	Color bar
Measurement Point	Pin ② of CN013 (REC C)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	30 (REC C RF)
Specified Value	A=140 ± 10 mVp-p

Adjusting method:

1) Release the protect.
   Page: 1, address: 00, data: 01
2) Change the data of page: D, address: 30, and adjust the amplitude (A) of the flat section of the chroma signal (red) to the specified value.
3) Press the PAUSE button of the adjusting remote commander.

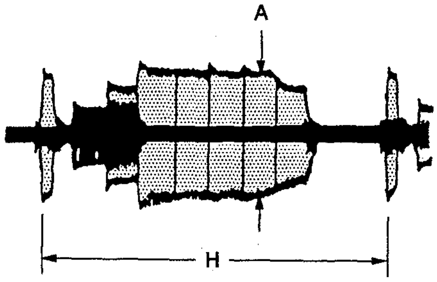


Fig. 8-20.

15. REC ATF level check (MA-137 board)

Mode	Record
Signal	No signal
Measurement Point	Pin ⑯ of CN013 (REC ATF)
Measuring Instrument	Oscilloscope
Specified Value	A=600 ± 30 mVp-p

Checking method:

1) Check that the REC ATF signal level (A) satisfies the specified value.

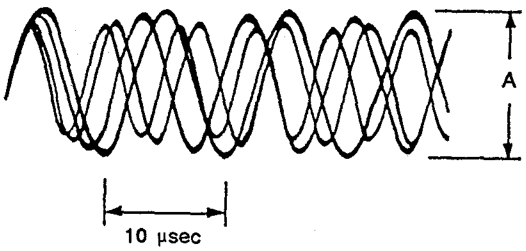


Fig. 8-21.

8-6. LCD SYSTEM ADJUSTMENTS

Note: Do not touch the LCD unit back light holder as you may receive an electric shock.

[Preparation]

1) Be sure to connect the LCD unit before adjusting.
2) Be sure to perform "EVR initial data input" before adjusting.

[Adjusting procedure]

1. fsc adjustment
2. EVR initial data input
3. G sub-bright adjustment
4. R sub-bright adjustment
5. B sub-bright adjustment
6. Contrast adjustment
7. R contrast adjustment
8. B contrast adjustment
9. Color adjustment
10. Hue adjustment
11. R sub-bias adjustment
12. B sub-bias adjustment
13. RGB bias adjustment
14. White balance adjustment
15. Character position adjustment

[Video input signal for adjustments]

Input a color bar signal whose chroma and burst signals are turned off into the video input terminal as the video input signal for adjustments. Check the signal level at the video input/output terminal.

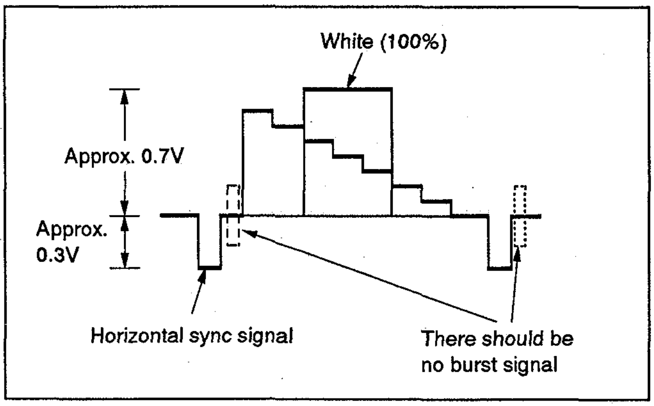


Fig. 8-22. Color bar signal whose chroma and burst signals are turned off.

1. fsc adjustment (RG-25 board)

Mode	POWER ON
Signal	No signal
Measurement Point	Pin ⑦ of IC901
Measuring Instrument	Frequency counter
Adjustment Page	RV902 (APC)
Adjustment Address	3579545 ± 50 Hz

Note: Connect the frequency counter with a high impedance (above 1 MΩ) and low capacity (below 20 pF) probe.

Adjusting method:

1) Adjust the fsc frequency to 3579545 ± 50 Hz with RV902.

2. EVR initial data input

Mode	POWER ON
Signal	Arbitrary
Adjustment Page	D

Adjusting method:

1) Release the protect.
   Page: 1, address: 00, data: 01
2) Select page D, and input the data in the following table.
   Note: To write in the nonvolatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time the data is set.

Address	Data
1B (BRIGHT)	80
1C (COLOR)	80
1D (HUE)	80
84 (R BRT)	A8
85 (G BRT)	A8
86 (B BRT)	A8
87 (B COM)	A8
88 (R COM)	A8
89 (COM)	A8
8A (GAIN)	A8
8B (R GAIN)	A8
8C (B GAIN)	A8
93 (BRIGHT)	80
94 (COLOR)	80
95 (HUE)	80

3. G sub-bright adjustment (RG-25 board)

Mode	POWER ON
Signal	Color bar signal whose chroma and burst signals are turned off
Measurement Point	Pin ⑪ of IC902 (VG)
Measuring Instrument	Oscilloscope External trigger: Pin ⑯ of IC902 (FRP)
Adjustment Page	D
Adjustment Address	85 (G BRT)
Specified Value	A=3.6 ± 0.1V

Adjusting method:

1) Release the protect.
   Page: 1, address: 00, data: 01
2) Check that the data of page: D, address: 1B is 80 with the adjusting remote commander.
3) Change the data of page: D, address: 85, and adjust the amplitude level (A) of the VG signal to the specified value.
   Amplitude: Level difference between the reverse waveform pedestal and non-reversed waveform pedestal.
4) Press the PAUSE button of the adjusting remote commander.

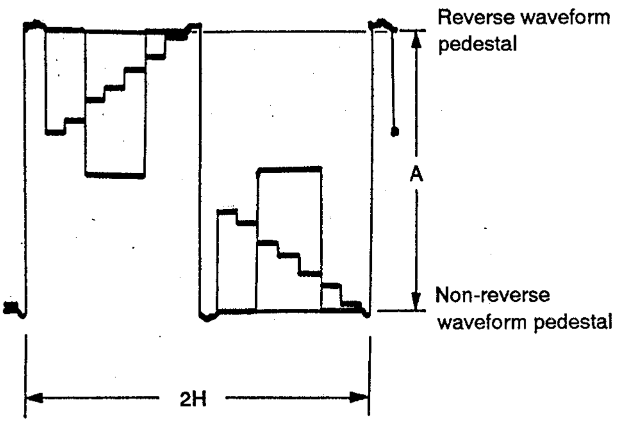


Fig. 8-23.

4. R sub-bright adjustment (RG-25 board)

Mode	POWER ON
Signal	Color bar signal whose chroma and burst signals are turned off
Measurement Point	CH1: Pin ⑪ of IC902 (VG) CH2: Pin ⑨ of IC902 (VR)
Measuring Instrument	Oscilloscope External trigger: Pin ⑯ of IC902 (FRP)
Adjustment Page	D
Adjustment Address	84 (R BRT)
Specified Value	Amplitude level difference between VR and VG signals=0 ± 0.1V

Adjusting method:

1) Release the protect.
   Page: 1, address: 00, data: 01
2) Change the data of page: D, address: 84, and equalize the amplitude level of the CH1 waveform and the CH2 waveform.
3) Press the PAUSE button of the adjusting remote commander.

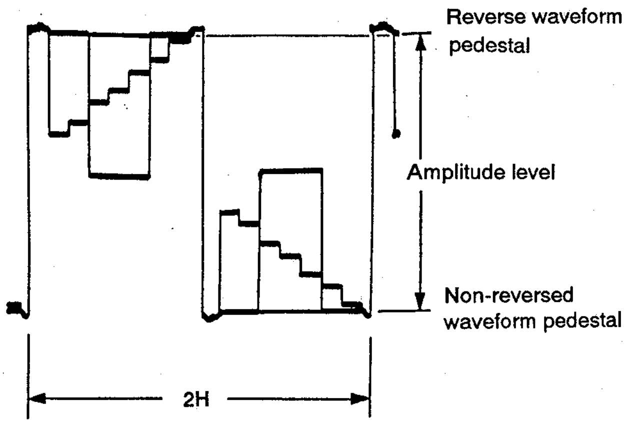


Fig. 8-24.

5. B sub-bright adjustment (RG-25 board)

Mode	POWER ON
Signal	Color bar signal whose chroma and burst signals are turned off
Measurement Point	CH1: Pin ⑪ of IC902 (VG) CH2: Pin ⑬ of IC902 (VB)
Measuring Instrument	Oscilloscope External trigger: Pin ⑯ of IC902 (FRP)
Adjustment Page	D
Adjustment Address	86 (B BRT)
Specified Value	Amplitude level difference between VB and VG signals=0 ± 0.1V

Adjusting method:

1) Release the protect.
   Page: 1, address: 00, data: 01
2) Change the data of page: D, address: 86, and equalize the amplitude level of the CH1 waveform and the CH2 waveform.
3) Press the PAUSE button of the adjusting remote commander.

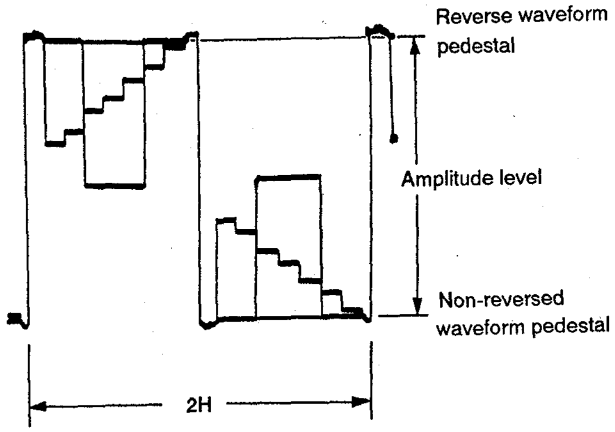


Fig. 8-25.

6. Contrast adjustment (RG-25 board)

Mode	POWER ON
Signal	Color bar signal whose chroma and burst signals are turned off
Measurement Point	Pin ⑪ of IC902 (VG)
Measuring Instrument	Oscilloscope External trigger: Pin ⑯ of IC902 (FRP)
Adjustment Page	D
Adjustment Address	8A (GAIN)
Specified Value	A=2.6 ± 0.1V

Adjusting method:

1) Release the protect.
   Page: 1, address: 00, data: 01
2) Change the data of page: D, address: 8A and adjust the voltage (A) between the white (100%) and pedestal to the specified value.
3) Press the PAUSE button of the adjusting remote commander.

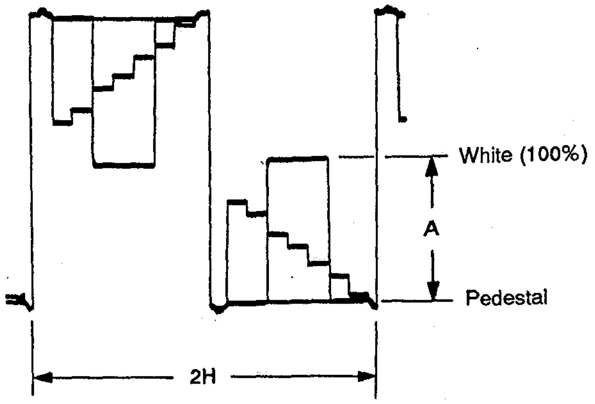


Fig. 8-26.

7. R contrast adjustment (RG-25 board)

Mode	POWER ON
Signal	Color bar signal whose chroma and burst signals are turned off
Measurement Point	Pin ⑨ of IC902 (VR)
Measuring Instrument	Oscilloscope External trigger: Pin ⑯ of IC902 (FRP)
Adjustment Page	D
Adjustment Address	8B (R GAIN)
Specified Value	A=2.6 ± 0.1V

Adjusting method:

1) Release the protect.
   Page: 1, address: 00, data: 01
2) Change the data of page: D, address: 8B, and adjust the voltage (A) between the white (100%) and pedestal to the specified value.
3) Press the PAUSE button of the adjusting remote commander.

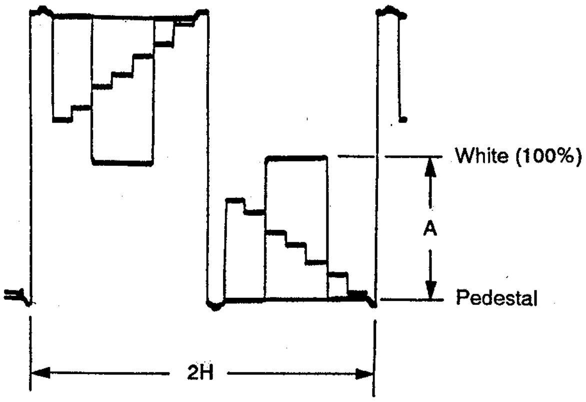


Fig. 8-27.

8. B contrast (RG-25 board)

Mode	POWER ON
Signal	Color bar signal whose chroma and burst signals are turned off
Measurement Point	Pin ⑬ of IC902 (VB)
Measuring Instrument	Oscilloscope External trigger: Pin ⑯ of IC902 (FRP)
Adjustment Page	D
Adjustment Address	8C (B GAIN)
Specified Value	A=2.6 ± 0.1V

Adjusting method:

1) Release the protect.
   Page: 1, address: 00, data: 01
2) Change the data of page: D, address: 8C, and adjust the voltage (A) between the white (100%) and pedestal to the specified value.
3) Press the PAUSE button of the adjusting remote commander.

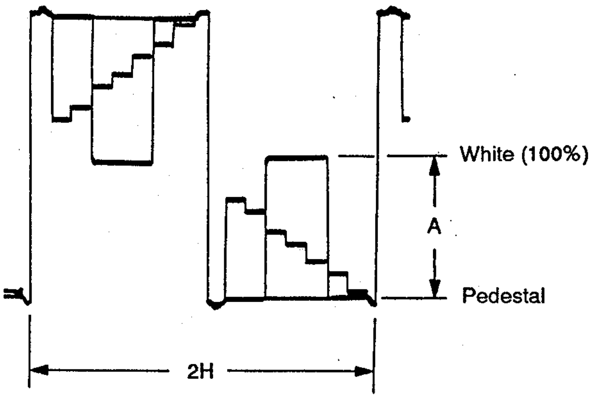


Fig. 8-28.

9. Color adjustment (RG-25 board)

Mode	POWER ON
Signal	Color bar (Chroma and burst signals ON)
Measurement Point	Pin ⑪ of IC902 (VG)
Measuring Instrument	Oscilloscope External trigger: Pin ⑯ of IC902 (FRP)
Adjusting Element	RV903
Specified Value	A=0 ± 0.1V

Adjusting method:

1) Check that the data of page: D, address 1C is 80 with the adjusting remote commander.
2) Minimize the level difference (A) of the white 75% and green with RV903.

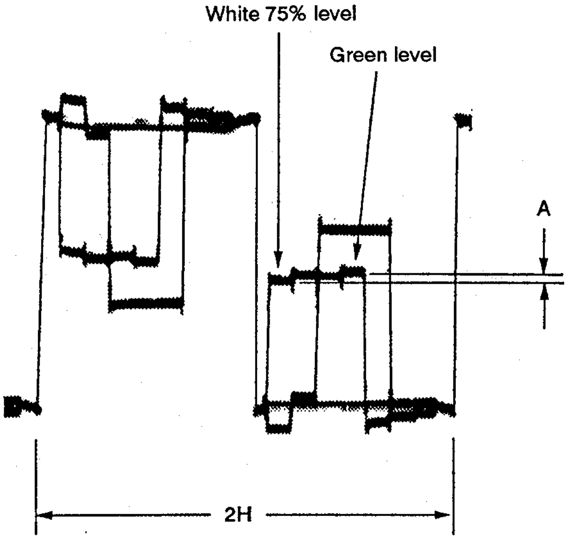


Fig. 8-29.

10. Hue adjustment (RG-25 board)

Mode	POWER ON
Signal	Color bar (Chroma and burst signals ON)
Measurement Point	CH1: Pin ⑪ if IC902 (VG) CH2: Pin ⑨ of IC902 (VR)
Measuring Instrument	Oscilloscope External trigger: Pin ⑯ of ICN902 (FRP)
Adjusting Element	RV901 (HUE)
Specified Value	B=A ± 0.1V

Adjusting method:

1) Check that the data of page: D, address: 1D is 80 with the adjusting remote commander.
2) Equalize the yellow level of the VG signal (A) and that of the VR signal (B) with RV901.
Yellow level: Level difference between yellow and pedestal

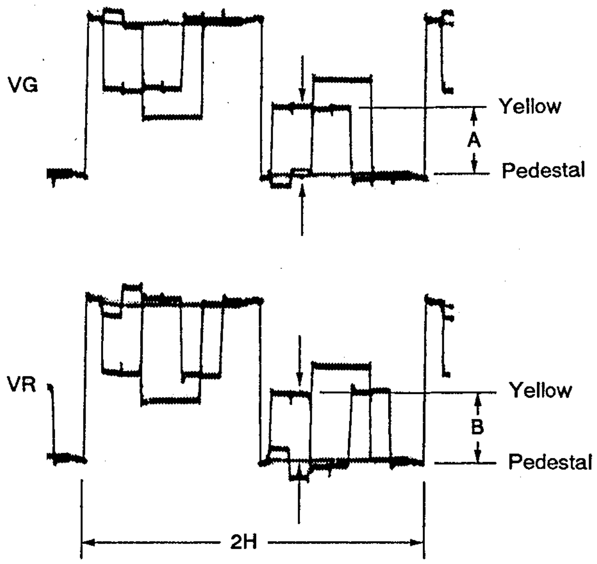


Fig. 8-30.

11. R sub-bias adjustment (RG-25 board)

Mode	POWER ON
Signal	Color bar signal whose chroma and burst signals are turned off
Measurement Point	CH1: Pin ⑪ of IC902 (VG) CH2: Pin ⑨ of IC902 (VR)
Measuring Instrument	Oscilloscope (DC range) External trigger: Pin ⑯ of IC902 (FRP)
Adjustment Page	D
Adjustment Address	88 (R COM)
Specified Value	DC level difference between the VR and VG signals=0 ± 0.1V

Adjusting method:
1) Check that the data of page: D, address: 89 is A8 with the adjusting remote commander.
2) Set the oscilloscope to the DC range, and equalize the GND levels of CH1 and CH2.
3) Release the protect.
   Page: 1, address: 00, data: 01
4) Change the data of page: D, address: 88, and coincide the CH1 and CH2 waveform. (To equalize the DC levels of the CH1 and CH2 waveform.)
5) Press the PAUSE button of the adjusting remote commander.

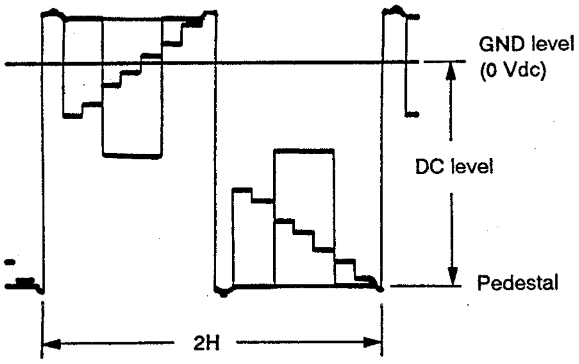


Fig. 8-31.

12. B sub-bias adjustment (RG-25 board)

Mode	POWER ON
Signal	Color bar signal whose chroma and burst signals are turned off
Measurement Point	CH1: Pin ⑪ of IC902 (VG) CH2: Pin ⑬ of IC902 (VB)
Measuring Instrument	Oscilloscope (DC range) External trigger: Pin ⑯ of IC902 (FRP)
Adjustment Page	D
Adjustment Address	87 (B COM)
Specified Value	DC level difference between the VB and VG signals=0 ± 0.1V

Adjusting method:
1) Set the oscilloscope to the DC range, and equalize the GND levels of CH1 and CH2.
2) Release the protect.
   Page: 1, address: 00, data: 01
3) Change the data of page: D, address: 87, and coincide the CH1 and CH2 waveform. (To equalize the DC levels of the CH1 and CH2 waveform.)
4) Press the PAUSE button of the adjusting remote commander.

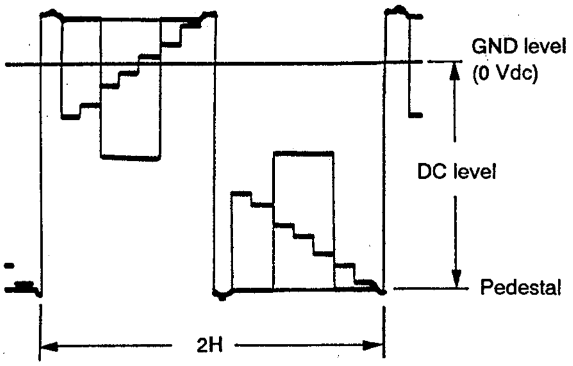


Fig. 8-32.

13. RGB bias adjustment

Mode	PB and PAUSE (LP)
Signal	Alignment tape: For checking operations (WR5-4NL) Monoscope section
Measurement Point	Check on the LCD display
Measuring Instrument	
Adjustment Page	D
Adjustment Address	89 (COM)
Specified Value	Minimum flicker

Adjusting method:

1) Play back the monoscope section of the LP alignment tape, and press the PAUSE button.
2) Release the protect with the adjusting remote commander.
   Page: 1, address: 00, data: 01
3) Change the data of page: D, address: 89, and minimize the flicker of the LCD display.
4) Press the PAUSE button of the adjusting remote commander.

14. White balance adjustment (RG-25 board)

Mode	POWER ON
Signal	Color bar signal whose chroma and burst signals are turned off
Measurement Point	Check on the LCD display
Measuring Instrument	
Adjustment Page	D
Adjustment Address	84 (R BRT), 86 (B BRT)
Specified Value	The display should not be colored

Adjusting method:

1) Release the protect.
   Page: 1, address: 00, data: 01
2) Check that the LCD display is not colored. If it is, change the data of address: 84 and address: 86 of page: D, and adjustment the display is not colored.
3) Press the PAUSE button of the adjusting remote commander.

15. Character position adjustment (RG-25 board)

Mode	POWER ON
Signal	Color bar
Measurement Point	Check on the LCD display
Measuring Instrument	
Adjusting Element	CV901
Specified Value	A=B

Adjusting method:

1) Press the MENU button, and set the menu display.
2) Select "SOUND".
3) Adjust A=B with CV901.

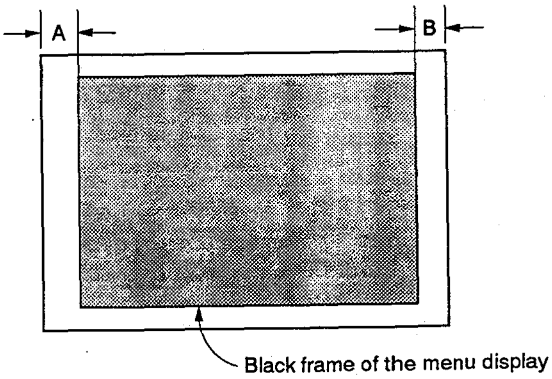


Fig. 8-33.

8-7. AUDIO SYSTEM ADJUSTMENTS

- Adjust using the color bar signal as the video signal input.

- Set the following modes at the menu display.

  SOUND························ NORMAL
  REC MODE ·················· SP
  ST MONITOR (Note 1)···· STEREO

  Note 1: Displayed on the menu display when the AFM stereo tape is played back.

[Connecting the measuring equipments for audio]

In addition to the measuring equipments for the video system, connect the measuring equipments for the audio system as shown in Fig. 8-34, and adjust with the power supply switch at "VTR ON" mode.

Note: 1) When inputting the audio signal, input the same signal to both the L and R channels, unless specified otherwise.

2) Be sure to insert the plug (shorting plug or dummy plug, etc.,) into the audio input/output terminal (right). If the plug is not inserted, the monaural mode will be set, and correct adjustments cannot be carried out.

(Monaural mode)

During recording ··· The REC AFM RF 1.7 MHz carrier will not be output.

During playback ···· The L+R signal will be output from the audio input/output terminal (left).

3) Adjustments for channel R in adjustments for both channels L and R are indicated in the [ ].

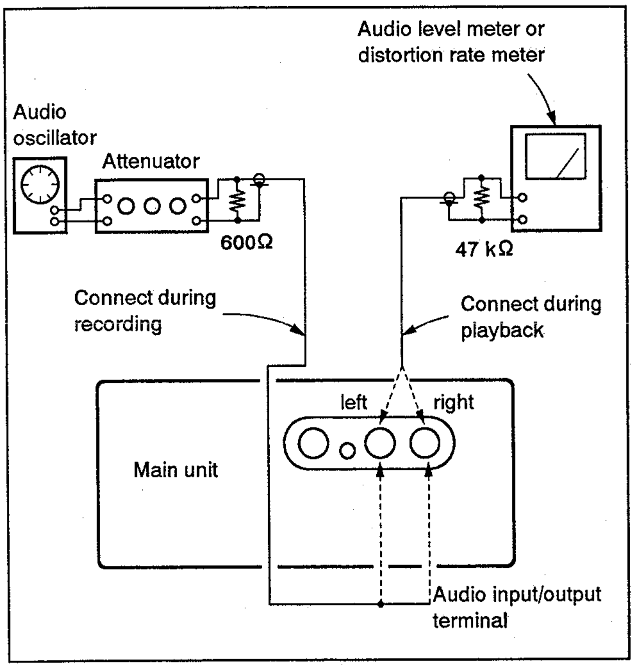

Audio level meter or distortion rate meter
Audio oscillator
Attenuator
600Ω
47 kΩ
Connect during recording
Connect during playback
left
right
Main unit
Audio input/output terminal

Fig. 8-34.

[Adjusting Procedure]

1) E-E output level check
2) REC matrix L–R check
3) REC matrix L+R check
4) 1.5 MHz carrier frequency adjustment
5) 1.7 MHz carrier frequency adjustment
6) 1.5 MHz record level check
7) 1.7 MHz record level check
8) 1.5 MHz playback level adjustment
9) 1.7 MHz playback level adjustment
10) 1.5 MHz deviation adjustment
11) 1.7 MHz deviation adjustment
12) Overall level characteristics, distortion rate check
13) Separation check
14) Overall noise level check

1. E-E output level check (AU-136 board)

Mode	Record
Signal	400 Hz, –7.5 dBs audio input terminal (right [left])
Measurement Point	Pin ⑪ of IC404 [Pin ⑪ of IC406]
Measuring Instrument	Oscilloscope or audio level meter
Specified Value	925^{+240}_{-190} mVp-p (–7.5 ± 2 dBs)

Checking method:
1) Check that the 400 Hz signal level satisfies the specification.

2. REC matrix L–R check (AU-136 board)

Mode	E-E
Signal	400 Hz, –7.5 dBS Input to both left and right audio input terminals
Measurement Point	Pin ⑦ of IC403
Measuring Instrument	Oscilloscope (Use 1: 1 probe)
Specified Value	0 ± 2 mVp-p

Checking method:
1) Input a 400 Hz, –7.5 dBs signal only to the right audio input terminal.
2) Check that the signal level of Pin ⑦ of IC403 is approximately 120 mVp-p.
3) Input a 400 Hz, –7.5 dBS signal to both the right and left audio input terminals.
4) Check that the signal level of Pin ⑦ of IC403 is 0 ± 2 mVp-p. (Note: Remove the video signal input)

3. REC matrix L+R check (AU-136 board)

Mode	Record
Signal	1. 400 Hz, –7.5 dBs: Audio input terminal (left) No signal: Audio input terminal (right) 2. No signal: Audio input terminal (left) 400 Hz, –7.5 dBs: Audio input terminal (right)
Measurement Point	Pin ① of IC403
Measuring Instrument	Oscilloscope
Specified Value	Level difference should be 0 ± 5 mVp-p when input only to the left terminal, and when input only to the right terminal.

Adjusting method:
1) Input the 400 Hz, –7.5 dBs signal only to the left audio input terminal. (Insert the shorting plug in the right audio input terminal.)
2) Read the 400 Hz signal level of Pin ① of IC403, and note it down. (Approx. 120 mVp-p)
3) Input the 400 Hz, –7.5 dBs signal only to the right audio input terminal. (Insert the shorting plug in the left audio input terminal.)
4) Check that the 400 Hz signal level of Pin ① of IC403 (value noted at step 2) is ± 5 mVp-p.

4. 1.5 MHz carrier frequency adjustment (AU-136 board)

Mode	Record
Signal	No signal
Measurement Point	Pin (79) of IC401 (1.5M CAR OUT)
Measuring Instrument	Frequency counter (Note)
Adjustment Page	D
Adjustment Address	7A (1.5 IR)
Specified Value	1.500 ± 0.003 MHz

Note: Use a high impedance (above 1 MΩ) and low capacity (below 20 pF) probe.

Adjusting method:
1) Release the protect.
   Page: 1, address: 00, data: 01
2) Change the data of page: D, address: 7A, and adjust the carrier frequency to the specified value.
3) Press the PAUSE button of the adjusting remote commander.

5. 1.7 MHz carrier frequency adjustment (AU-136 board)

Mode	Record
Signal	No signal
Measurement Point	Pin (62) of IC401 (1.7M CAR OUT)
Measuring Instrument	Frequency counter (Note)
Adjustment Page	D
Adjustment Address	7C (1.7 IR)
Specified Value	1.700 ± 0.003 MHz

Note: Use a high impedance (above 1 MΩ), and low capacity (below 20 pF) probe.

Adjusting method:
1) Release the protect.
   Page: 1, address: 00, data: 01
2) Change the data of page: D, address: 7C, and adjust the carrier frequency to the specified value.
3) Press the PAUSE button of the adjusting remote commander.

6. 1.5 MHz carrier level check (AU-136 board)

Mode	Record
Signal	No signal
Measurement Point	Pin (79) of IC401 (1.5M CAR OUT)
Measuring Instrument	Oscilloscope
Specified Value	A=450 ± 50 mVp-p

Checking method:
1) Check that the 1.5 MHz carrier level satisfies the specified value.

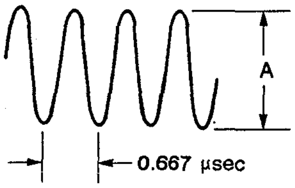


Fig. 8-35.

7. 1.7 MHz carrier level check (AU-136 board)

Mode	Record
Signal	No signal
Measurement Point	Pin (62) of IC401 (1.7M CAR OUT)
Measuring Instrument	Oscilloscope
Specified Value	420 ± 50 mVp-p

Checking method:
1) Check that the 1.7 MHz carrier level satisfies the specified value.

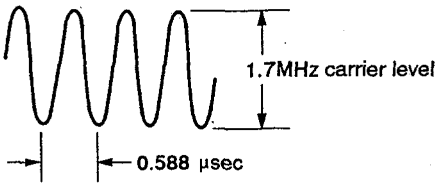


Fig. 8-36.

8. 1.5 MHz playback level adjustment

Mode	Playback
Signal	Alignment tape: For checking operations (WR5-5NSP)
Measurement Point	Left or right audio output terminal
Measuring Instrument	Audio level meter
Adjustment Page	D
Adjustment Address	78 (1.5 DEV PB)
Specified Value	–7.5 ± 0.5 dBs

Adjusting method:
1) Release the protect.
   Page: 1, address: 00, data: 01
2) Change the data of page: D, address: 78, and adjust the 400 Hz signal level to the specified value.
3) Press the PAUSE button of the adjusting remote commander.

9. 1.7 MHz playback level adjustment

Mode	Playback
Signal	Alignment tape: For checking AFM stereo operations (WR5-9NS) Stereo (color bar) section
Measurement Point	Audio output terminal (right)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	79 (1.7 DEV PB)
Specified Value	Minimum 400 Hz crosstalk component

Adjusting method:

1) Release the protect.
   Page: 1, address: 00, data: 01
2) Change the data of page: D, address: 79, and minimize the 400 Hz crosstalk component.
3) Press the PAUSE button of the adjusting remote commander.

10. 1.5 MHz deviation adjustment

Mode	Record and playback
Signal	400 Hz, –7.5 dBs
Measurement Point	Audio input/output terminal (left)
Measuring Instrument	Audio level meter
Adjustment Page	D
Adjustment Address	7B (1.5 DEV REC)
Specified Value	–7.5 ± 0.5 dBs

Adjusting method:

1) Release the protect.
   Page: 1, address: 00, data: 01
2) Input the 400 Hz, –7.5 dBs signal only to the left audio input terminal.
   (Insert a shorting plug in the right audio input terminal.)
3) Record the signal.
4) Remove the input signal.
5) Play back the recorded section.
6) Check that the playback signal level satisfies the specified value.
7) If not, change the data of page: D, address: 7B and repeat steps 2) to 6).

Playback signal level	Changing the data
When smaller than the specified value	Increase
When greater than the specified value	Decrease

9) Press the PAUSE button of the adjusting remote commander.

11. 1.7 MHz deviation adjustment

Mode	Record and playback
Signal	400 Hz, –7.5 dBs
Measurement Point	Audio input/output terminal (right)
Measuring Instrument	Audio level meter
Adjustment Page	D
Adjustment Address	7D (1.7 DEV REC)
Specified Value	–7.5 ± 0.5 dBs

Adjusting method:

1) Release the protect.
   Page: 1, address: 00, data: 01
2) Input the 400 Hz, –7.5 dBs signal only to the right audio input terminal.
   (Insert a shorting plug in the left audio input terminal.)
3) Record the signal.
4) Remove the input signal.
5) Play back the recorded section.
6) Check that the playback signal level satisfies the specified value.
7) If not, change the data of page: D, address: 7D and repeat steps 2) to 6).

Playback signal level	Changing the data
When smaller than the specified value	Increase
When greater than the specified value	Decrease

9) Press the PAUSE button of the adjusting remote commander.

12. Overall level characteristics distortion rate check

Mode	Self recording/playback
Signal	400 Hz, –7.5 dBs: Audio input terminal (left [right]) No signal: Audio input terminal (right [left])
Measurement Point	Audio output terminal (left [right])
Measuring Instrument	Audio level meter and distortion meter
Specified Value	Level: –7.5 ± 2 dBs Distortion rate: Below 1.2% (Note 2)

Note: 1) [ ] contains points to be measured when checking the right channel.
2) Value when the following filter is used

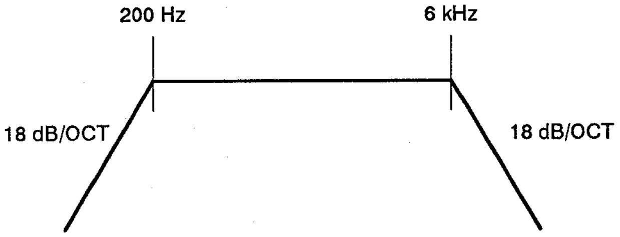


Fig. 8-37.

Checking method:
1) Input the 400 Hz, –7.5 dBs signal only to the left audio input terminal [right].
   Note: Be sure to insert the shorting plug in the terminal without any signal input.
2) Record the signal.
3) Remove the input signal.
4) Play back the recorded section.
5) Check that the 400 Hz signal level of the left audio output terminal [right] is –7.5 ± 2 dBs, and distortion rate is below 1.2% (Note 2).

13. Separation check

Mode	Self recording/playback
Signal	No signal: Audio input terminal (left [right]) 1 kHz, –7.5 dBs: Audio input terminal (right [left])
Measurement Point	Audio output terminal (left [right])
Measuring Instrument	Audio level meter (Use the IHF-A curve auditory correction filter)
Specified Value	Below –27.5 dBs

Note: [ ] contains points to be measured when checking the right channel.

Checking method:
1) Insert the shorting plug into the left audio input terminal [right], and input the 1 kHz, –7.5 dBs signal only to the right audio input terminal [left].
2) Record the signal.
3) Remove the input signal.
4) Play back the recorded section.
5) Check that the crosstalk (1 kHz) level of the left audio output terminal [right] is below –27.5 dBs.

14. Overall noise level check

Mode	Self-recording
Signal	No signal: Audio input terminal (left and right)
Measurement Point	Audio output terminal (left [right])
Measuring Instrument	Audio level meter (Use the IHF-A curve auditory correction filter)
Specified Value	Below –63.0 dBs

Note: [ ] contains points to be measured when checking the right channel.

Checking method:
1) Insert the shorting plug in both the left and right audio input terminals.
2) Record.
3) Remove the shorting plug.
4) Play back the recorded section.
5) Check that the noise level of the left audio output terminal [right] is below –63.0 dBs.

8-8. TGV-3 ELECTRICAL ADJUSTMENTS

Use the following measuring equipments in electrical adjustments.

〔Equipments Used〕

1) TV Monitor
2) Oscilloscope 2 phenomena, band 30 MHz or wider, with delay mode (Use 10:1 probe unless specified otherwise.)
3) Frequency counter
4) Pattern generator
5) Digital voltmeter
6) Voice multiplexed signal generator
7) Regulated power supply
8) Video cassette recorder (GV-S50)

〔Connecting the Equipments〕

Connect the video cassette recorder (GV-S50) and adjust, unless specified otherwise.

Position of Tuner Timer Unit (TGV-3) Switch

- Input/output selection switch ·························· TV position

1. Clock adjustment (TM-118 board)

Measurement Point	Pin ⑧ of IC400
Measuring Instrument	Frequency counter
Adjusting Element	CV400
Specified Value	4096.010 ± 0.015 Hz

Adjusting method:

1) Adjust the clock frequency to the specified value with CV400.

2. RF AGC adjustment (TU-142 board)

Measurement Point	TV broadcasting signal
Measuring Instrument	Connect the TV monitor and check
Adjusting Element	
Specified Value	Refer to Fig. 8-38.

Adjusting method:

1) Adjust the contrast of the TV monitor to maximum.
2) Rotate the RV for adjusting RF AGC until the snow noise appears.
3) Rotate it in the opposite direction until the snow noise disappears.
4) Receive each channel and check that there is no beat or image distortion by cross modulations, nor snow noise.

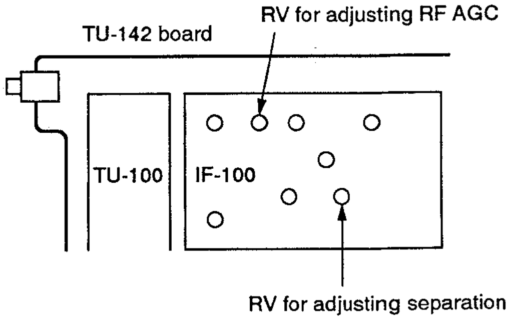


Fig. 8-38.

3. Separation adjustment (TU-142 board)

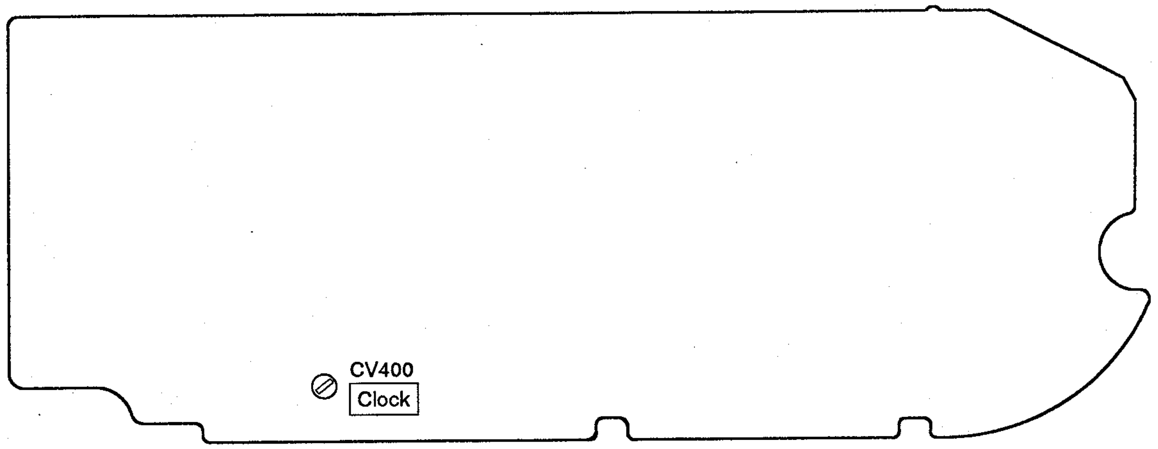
Signal	Voice multiplexed RF signal (VIDEO : Color bar AUDIO L : 400 Hz AUDIO R : 1 kHz)
Measurement Point	Lch: Pin ㉑ of CN100 Rch: Pin ㉒ of CN100
Measuring Instrument	Oscilloscope
Specified Value	Refer to Fig. 8-38.

Adjusting method:

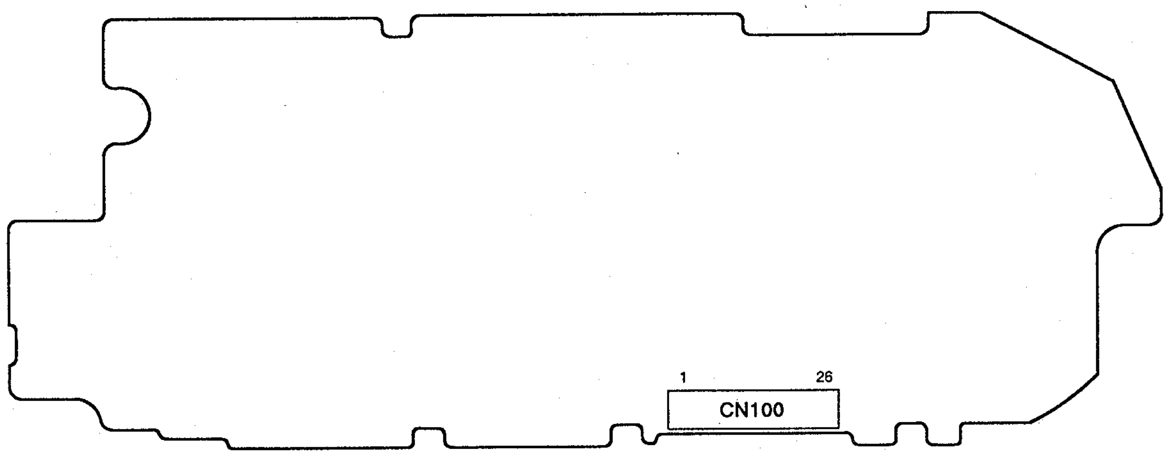
1) Adjust the RV for adjusting separation so that the crosstalk component (1 kHz) for Lch and that (400 Hz) for Rch become minimum.

8-9. ARRANGEMENT DIAGRAM FOR ADJUSTMENT PARTS

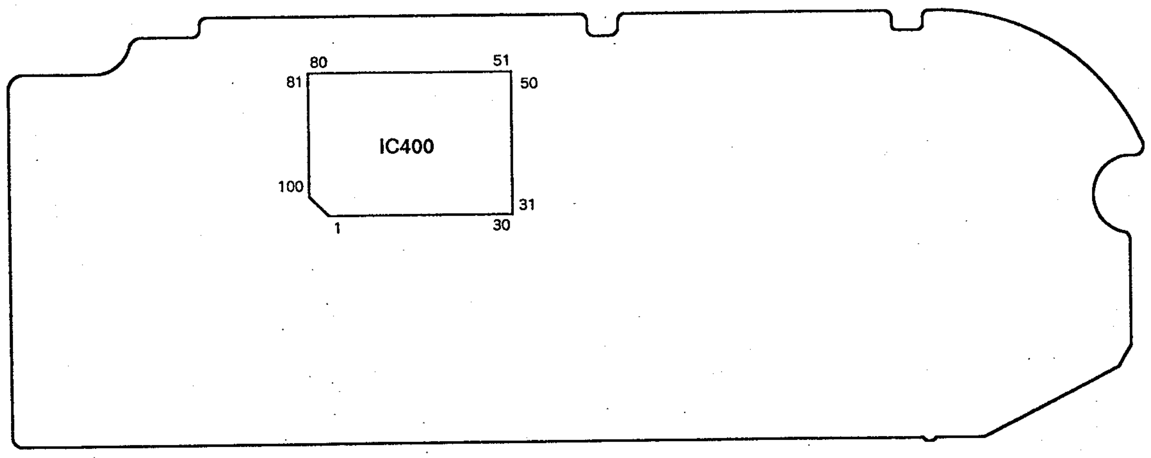
TM-118 BOARD (COMPONENT SIDE)


CV400
Clock

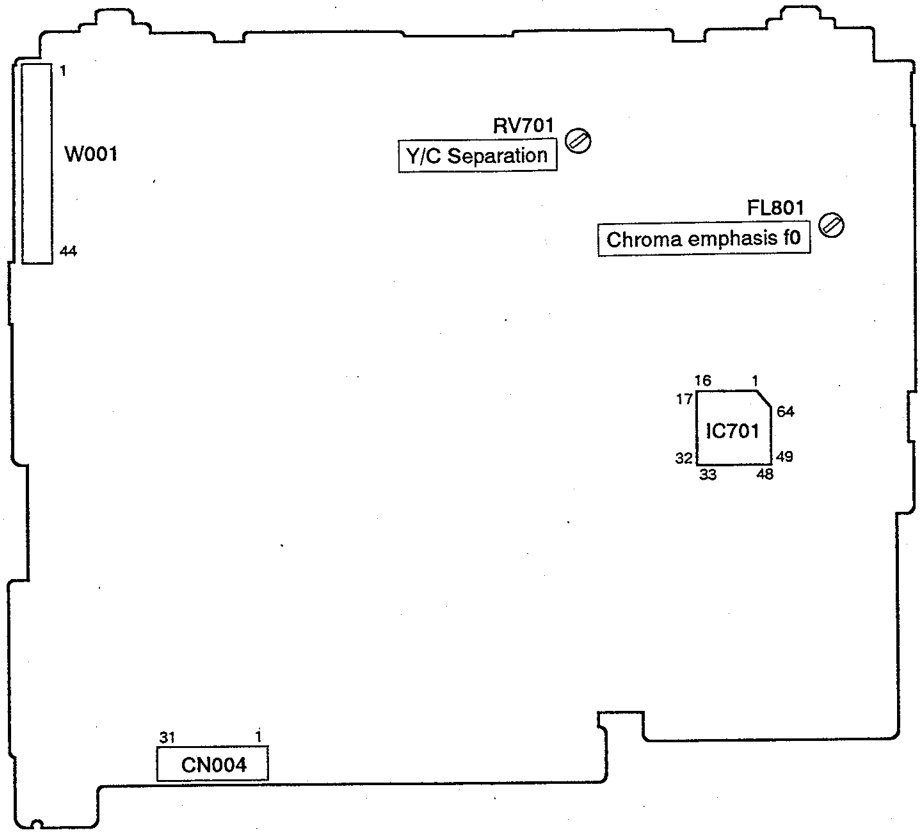
TM-118 BOARD (CONDUCTOR SIDE)



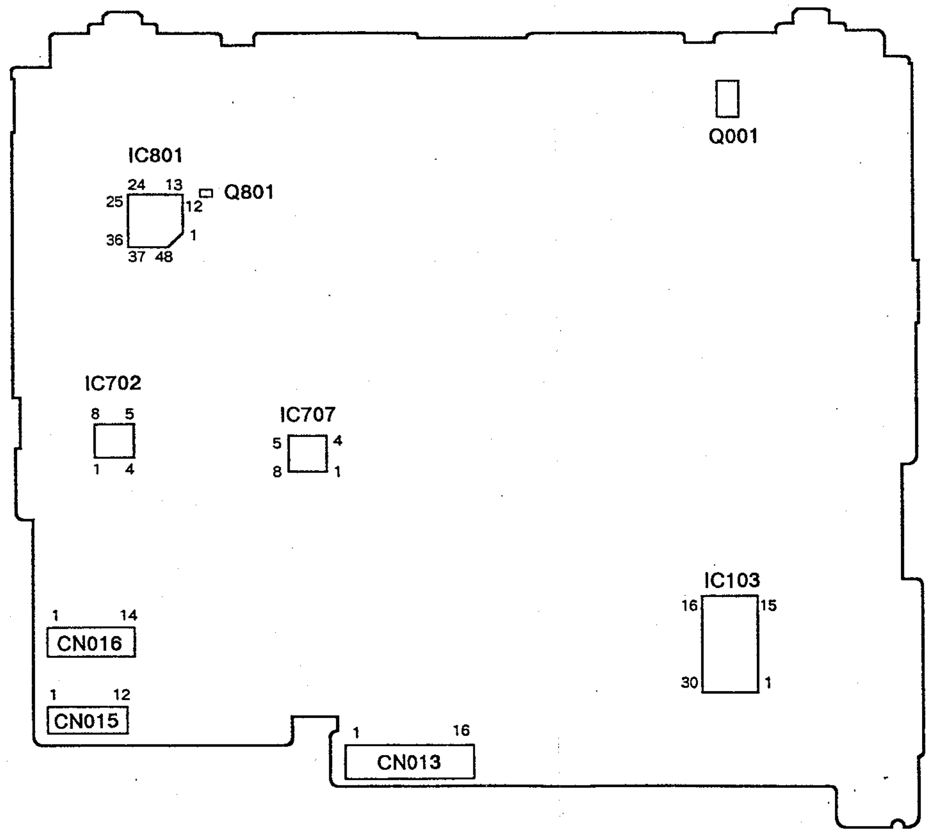
TU-142 BOARD (CONDUCTOR SIDE)


80
51
81
50
IC400
100
31
1
30

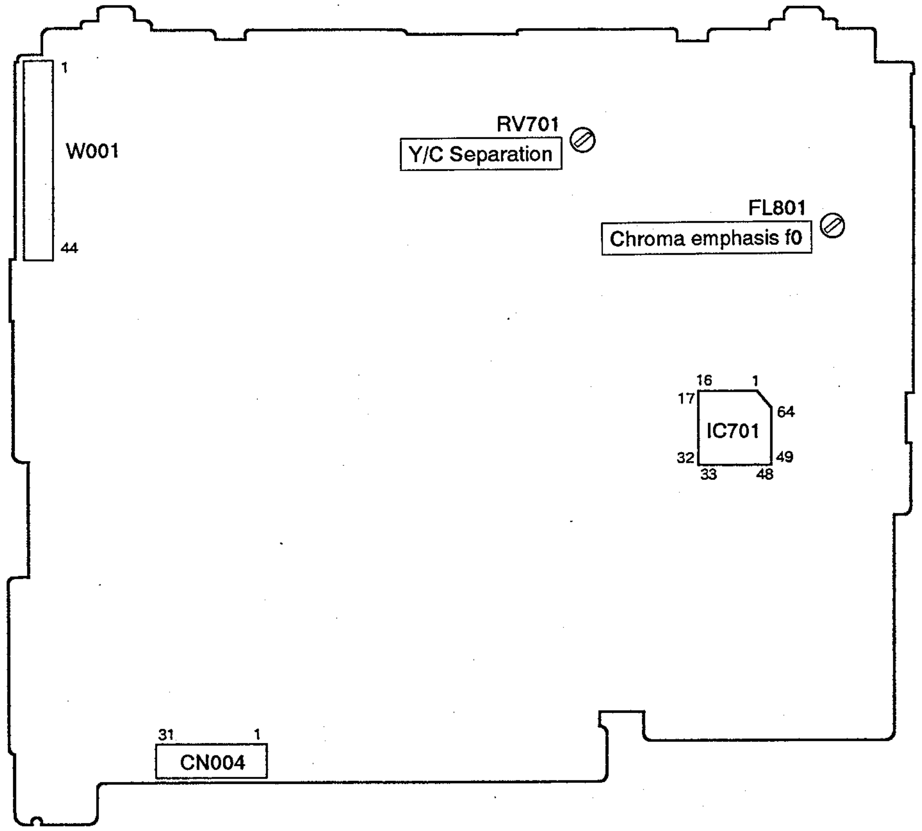
MA-137 BOARD (COMPONENT SIDE)


1
W001
44
RV701
Y/C Separation
FL801
Chroma emphasis f0
16
1
17
64
IC701
32
49
33
48
31
1
CN004

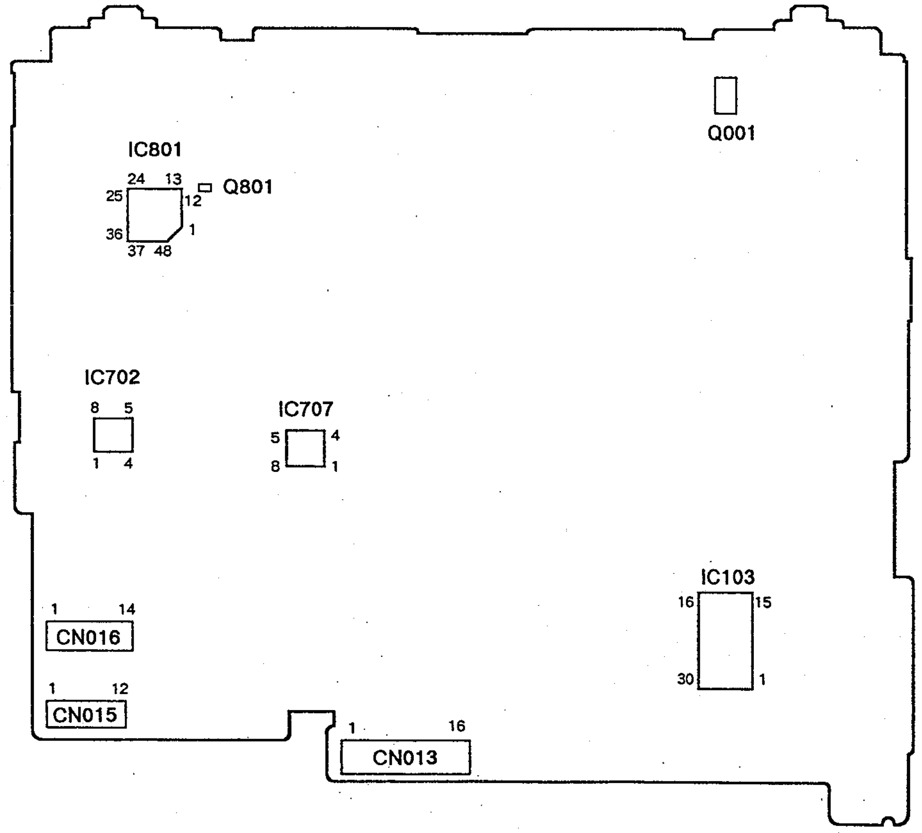
MA-137 BOARD (CONDUCTOR SIDE)


Q001
IC801
24
13
25
12
Q801
36
1
37
48
IC702
8
5
1
4
IC707
5
4
8
1
IC103
16
15
30
1
1
14
CN016
1
12
CN015
1
16
CN013

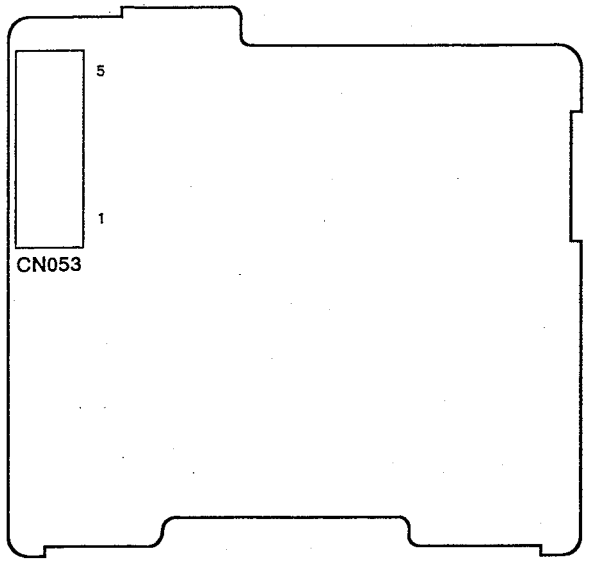
MA-137 BOARD (COMPONENT SIDE)


1
W001
44
RV701
Y/C Separation
FL801
Chroma emphasis f0
16
1
17
64
IC701
32
49
33
48
31
1
CN004

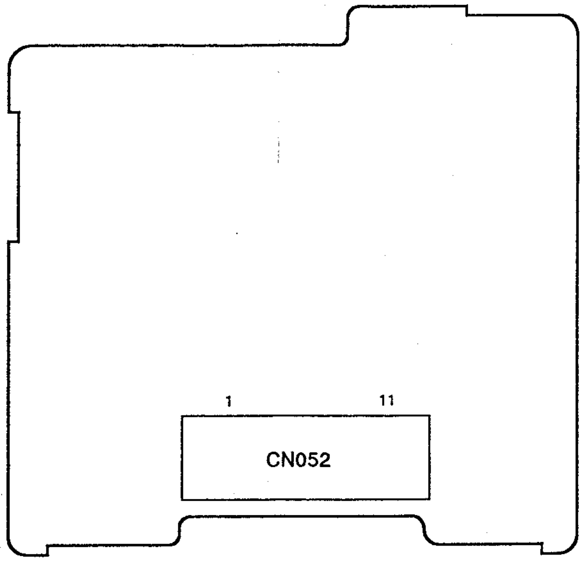
MA-137 BOARD (CONDUCTOR SIDE)


Q001
IC801
24
13
25
12
Q801
36
1
37
48
IC702
8
5
1
4
IC707
5
4
8
1
IC103
16
15
30
1
1
14
CN016
1
12
CN015
1
16
CN013

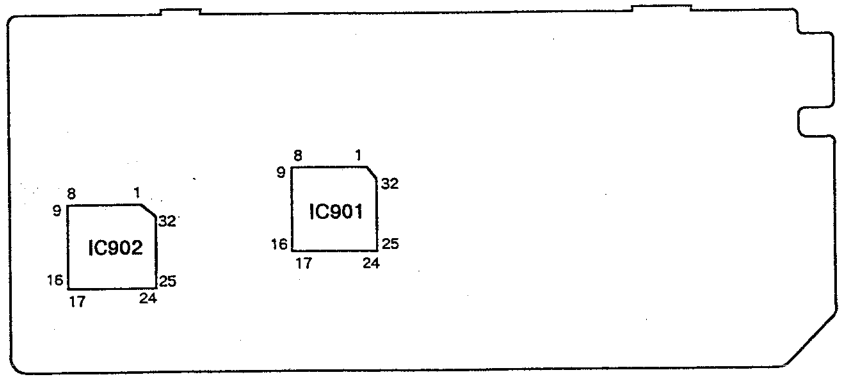
RP-144 BOARD (COMPONENT SIDE)



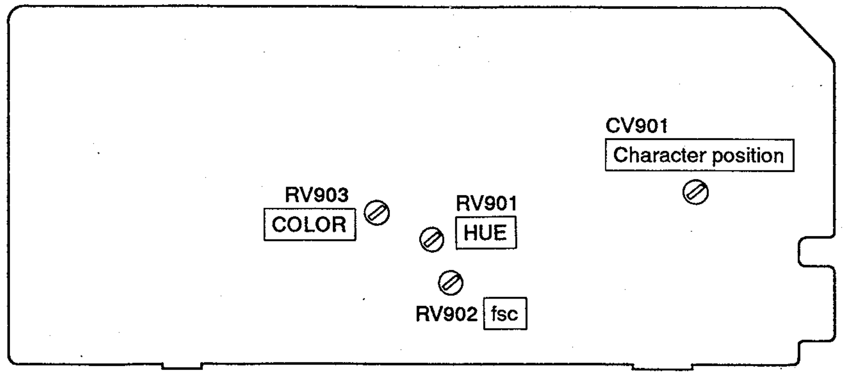
RP-144 BOARD (CONDUCTOR SIDE)



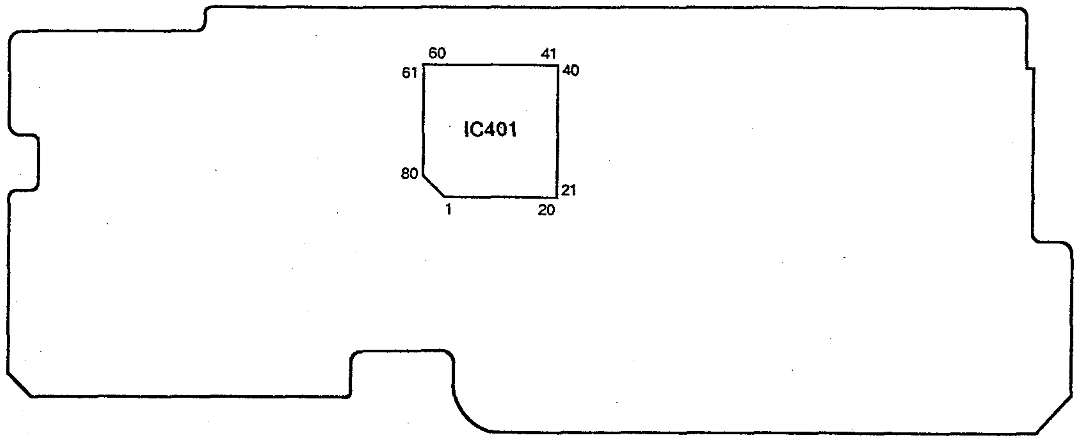
RG-25 BOARD (CONDUCTOR SIDE)


8
1
9
32
IC902
16
25
17
24
8
1
9
32
IC901
16
25
17
24

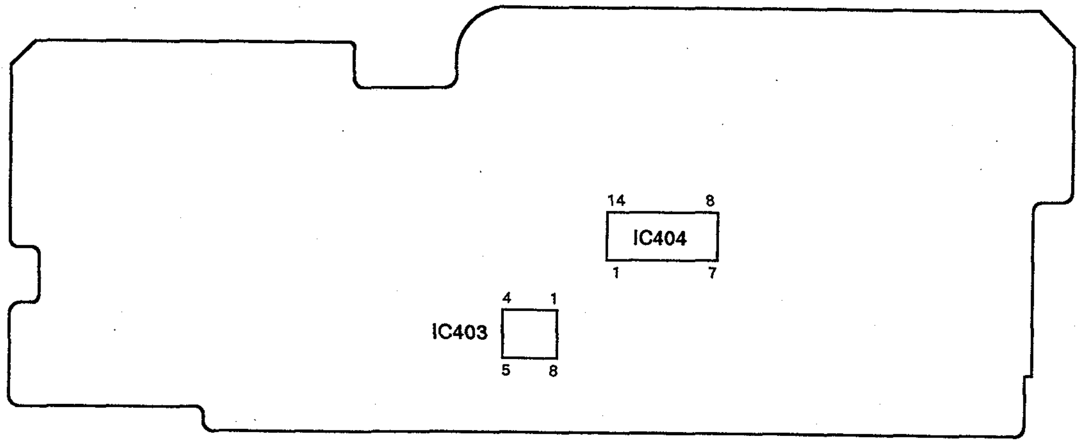
RG-25 BOARD (COMPONENT SIDE)


CV901
Character position
RV903
COLOR
RV901
HUE
RV902
fsc

AU-136 BOARD (CONDUCTOR SIDE)


60
41
61
40
IC401
80
21
1
20

AU-136 BOARD (COMPONENT SIDE)

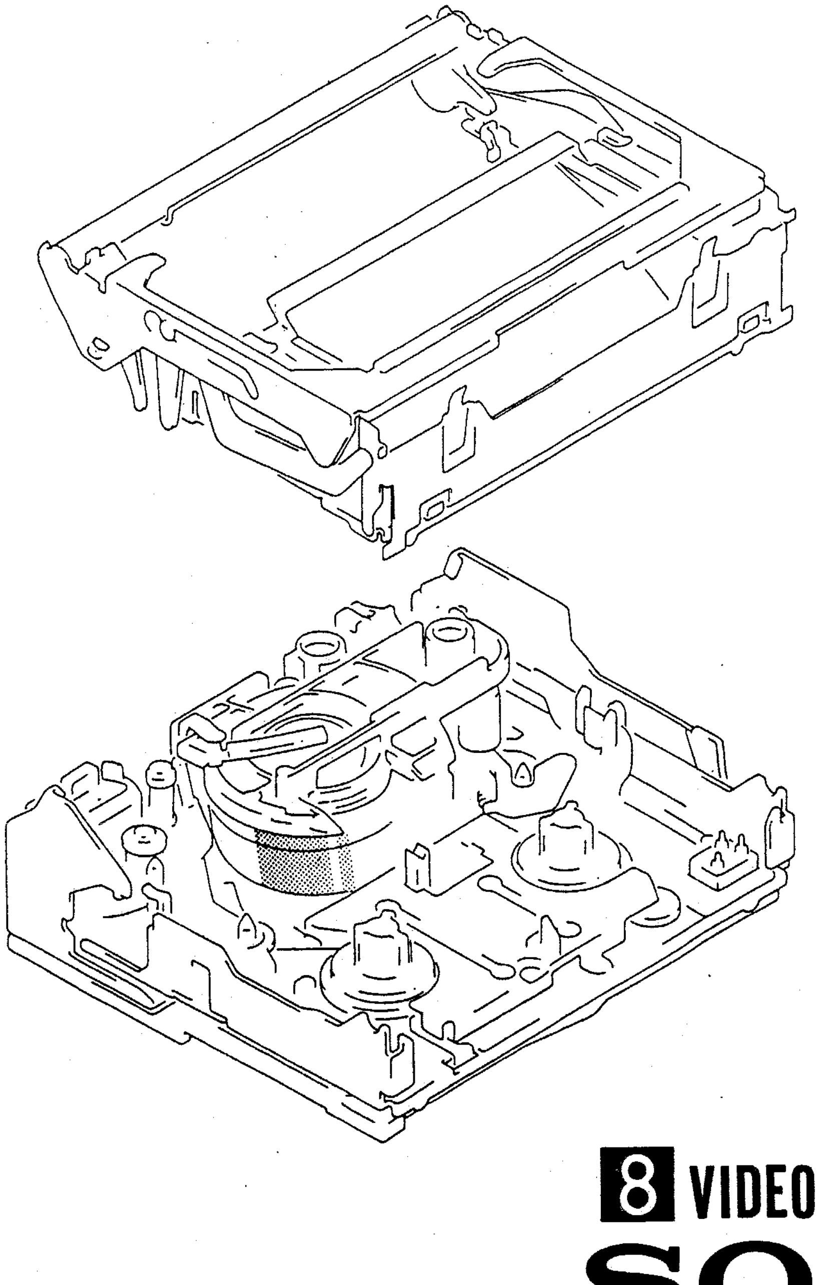

14
8
IC404
1
7
4
1
IC403
5
8

8 mm Video MECHANICAL ADJUSTMENT MANUAL IV

A MECHANISM

Video 8

File with the SERVICE MANUAL



8 VIDEO RECORDER

SONY®

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1. PREPARATION FOR MECHANICAL CHECK, ADJUSTMENT AND REPLACEMENT

For removal of the cabinet and boards, refer to "Disassembly" in each Service Manual.
Mechanical adjustment is done in the USE mode. (To select the USE mode, refer to "1-3, Handling of Mode Selector".)

1-1. CASSETTE COMPARTMENT ASSEMBLY

1. Removal (Fig. 1)

1) Select the USE mode.
2) Push the part ⓐ of lock arm ❶ toward the arrow Ⓐ to unlock from lock guide ❷, and raise the cassette compartment as shown in Fig. a.
3) Remove two screws ❸ and remove the LS frame ❹ toward the arrow Ⓑ.
4) With the cassette compartment assembly ❺ pushed in arrow Ⓒ direction, distort tabs ⓑ and ⓒ of MD side plate toward the arrow Ⓓ to disengage from catches ⓓ and ⓔ of cassette compartment assembly respectively.
   In such a case, insert a screwdriver between MD side plate and catch and disengage the tab ⓑ first, then disengage the tab ⓒ for easy removal as shown in Fig. b.
5) Raise the cassette compartment assembly ❺ in the opposite direction of arrow Ⓒ until the shafts ⓕ and ⓖ are disengaged, and push left and right side plates toward arrow Ⓓ to remove the cassette compartment assembly.

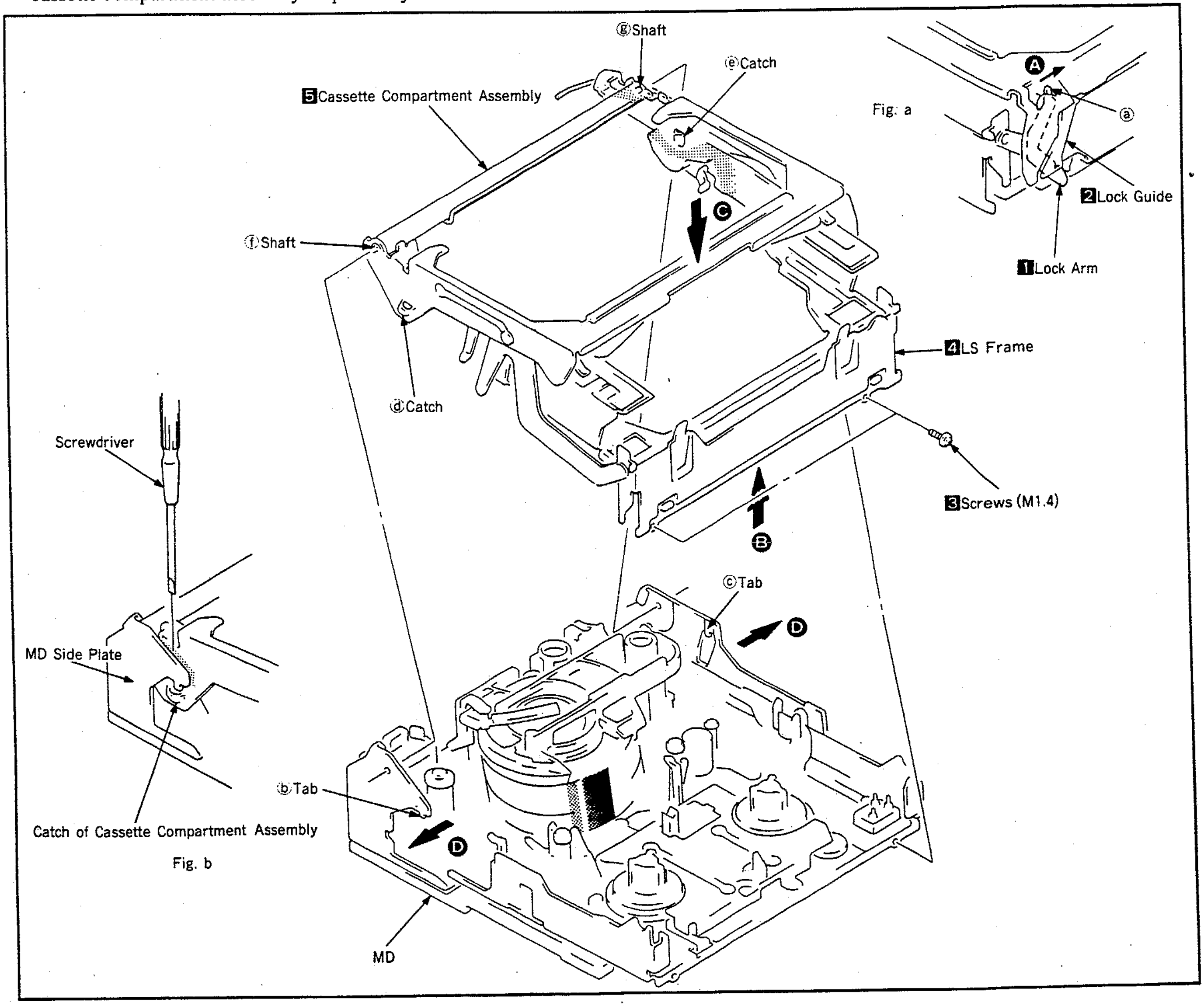

ⓖShaft
ⓔCatch
❺Cassette Compartment Assembly
Fig. a
Ⓐ
ⓐ
❷Lock Guide
❶Lock Arm
Ⓒ
ⓕShaft
❹LS Frame
ⓓCatch
Screwdriver
❸Screws (M1.4)
Ⓑ
ⓒTab
Ⓓ
MD Side Plate
ⓑTab
Catch of Cassette Compartment Assembly
Fig. b
Ⓓ
MD

Fig. 1

2. Mounting (Fig. 2)

1) Select the USE mode.
2) Draw the cassette holder 6 of cassette compartment assembly 5 toward the arrow 🅔, and lower the LS frame 4 toward the arrow 🅕.
3) With the cassette compartment assembly 5 tilted by about 45° against MD, insert shafts ⓕ and ⓖ of cassette compartment assembly into holes ⓗ and ⓘ of MD side plate respectively.
   At this time, the part ⓙ of torsion bar must be positioned on the side ⓚ of LS flexible board (FP-443) (not on the side ⓛ), as shown in Fig. c.
4) Holding holes ⓗ and ⓘ of MD side plate, press the cassette compartment assembly 5 so that its catches ⓓ and ⓔ are engaged with tabs ⓑ and ⓒ of MD side plate. In such a case, the lock arm 1 of cassette compartment assembly must be inserted into a groove in the guide rail 7 on the MD side plate as shown in Fig. d.
5) Insert left and right side plates ⓜ and ⓝ of LS frame 4 inside the LS chassis 8.
6) Push down the cassette compartment to lock.

Note : Make sure that the shafts ⓕ, ⓖ and the tabs ⓞ, ⓟ are set in the MD side plate properly.

7) Tighten two screws 3.

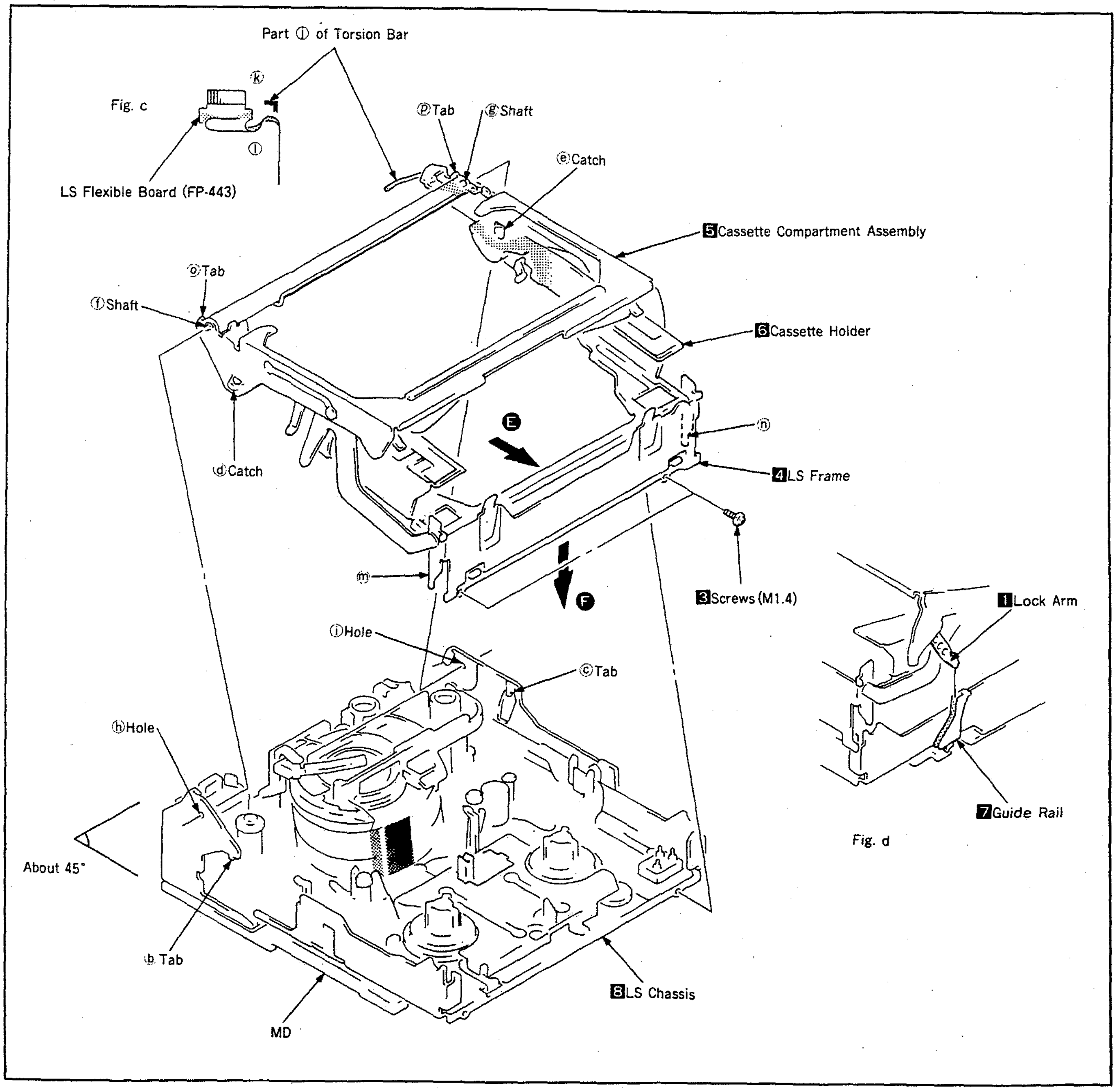

Part ⓙ of Torsion Bar
Fig. c
ⓚ
ⓛ
LS Flexible Board (FP-443)
ⓟTab
ⓖShaft
ⓔCatch
5Cassette Compartment Assembly
ⓞTab
ⓕShaft
6Cassette Holder
🅔
ⓝ
ⓓCatch
4LS Frame
ⓜ
🅕
3Screws (M1.4)
1Lock Arm
ⓘHole
ⓒTab
ⓗHole
About 45°
ⓑ Tab
8LS Chassis
MD
7Guide Rail
Fig. d

Fig. 2

1-2. OPERATION WITH CASSETTE COMPARTMENT ASSEMBLY REMOVED (Fig. 3)

1) Referring to the Service Manual, supply power with the cabinet and camera removed. (Make the mechanical deck ready to operate.)
2) Place the cap ❷ on the Reflector C ❶.
3) Press the pin of the push switch ❸ (ON state) and fix it with adhesive tape ❹ in that state.

Note : Press the asterisked (∗) pin to set the REC mode.
(This is not required for the other modes.)

4) Push the cassette compartment DOWN switch ❺ in an arrow direction as shown in Fig. a.

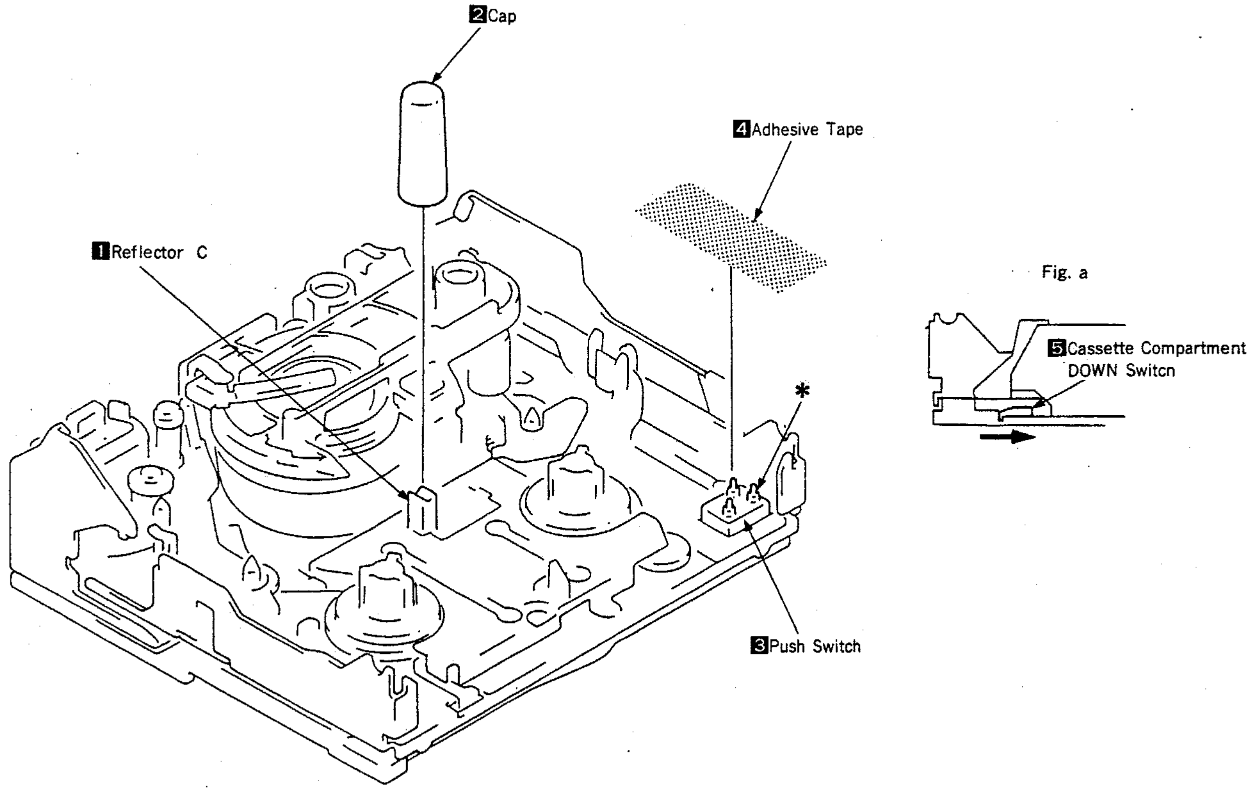

❷Cap
❹Adhesive Tape
❶Reflector C
Fig. a
❺Cassette Compartment DOWN Switcn
∗
❸Push Switch

Fig. 3

1-3. HANDLING OF MODE SELECTOR

- Stick the MD process table label to the mode selector IV panel, then mount the panel on the mode selector.
  U,U', FL, O, O' and A mechanisms have different mode indications respectively. Select your disired type. (Fig.4)

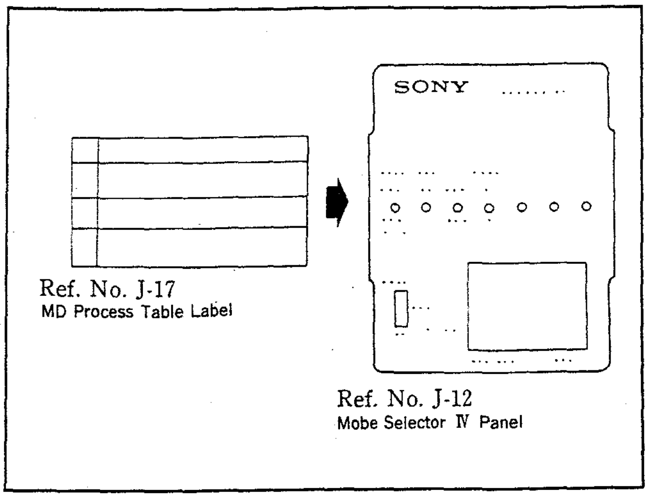

SONY ....
Ref. No. J-17
MD Process Table Label
Ref. No. J-12
Mobe Selector IV Panel

Fig. 4

1 Construction (Fig.5)

2 Connection (Fig.6)

For CCD-FX410 series

1) Insert the FP-425 flexible connector **1** and M-SW connector **2** into the mode selector IV conversion connector **3** respectively.

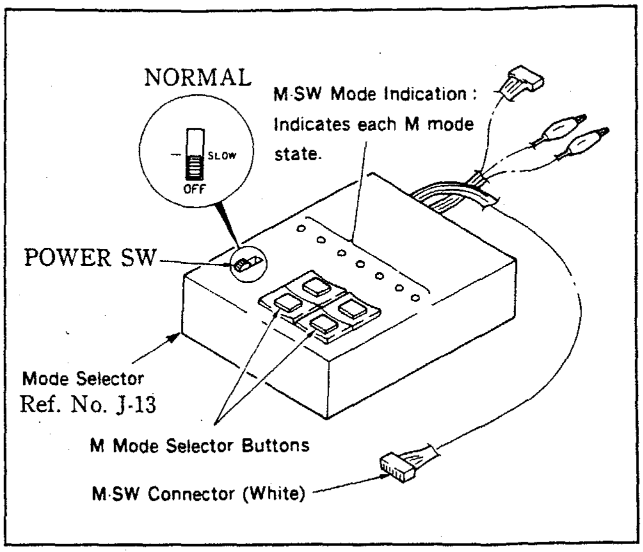

NORMAL
SLOW
OFF
POWER SW
M·SW Mode Indication :
Indicates each M mode state.
Mode Selector
Ref. No. J-13
M Mode Selector Buttons
M·SW Connector (White)

Fig. 5

3. Handling

1) Use the M mode selector buttons only.
2) During mode selection, "BLANK" lights up when no mode is being selected.
3) If the right M mode selector button is kept pressed, END, EJECT, USE, LOAD, READY,TURN, REC and FF light up in that order.
4) When changing over from the FF mode back to the END mode, press the left M mode selector botton to select your desired mode.

For CCD-FX410 series

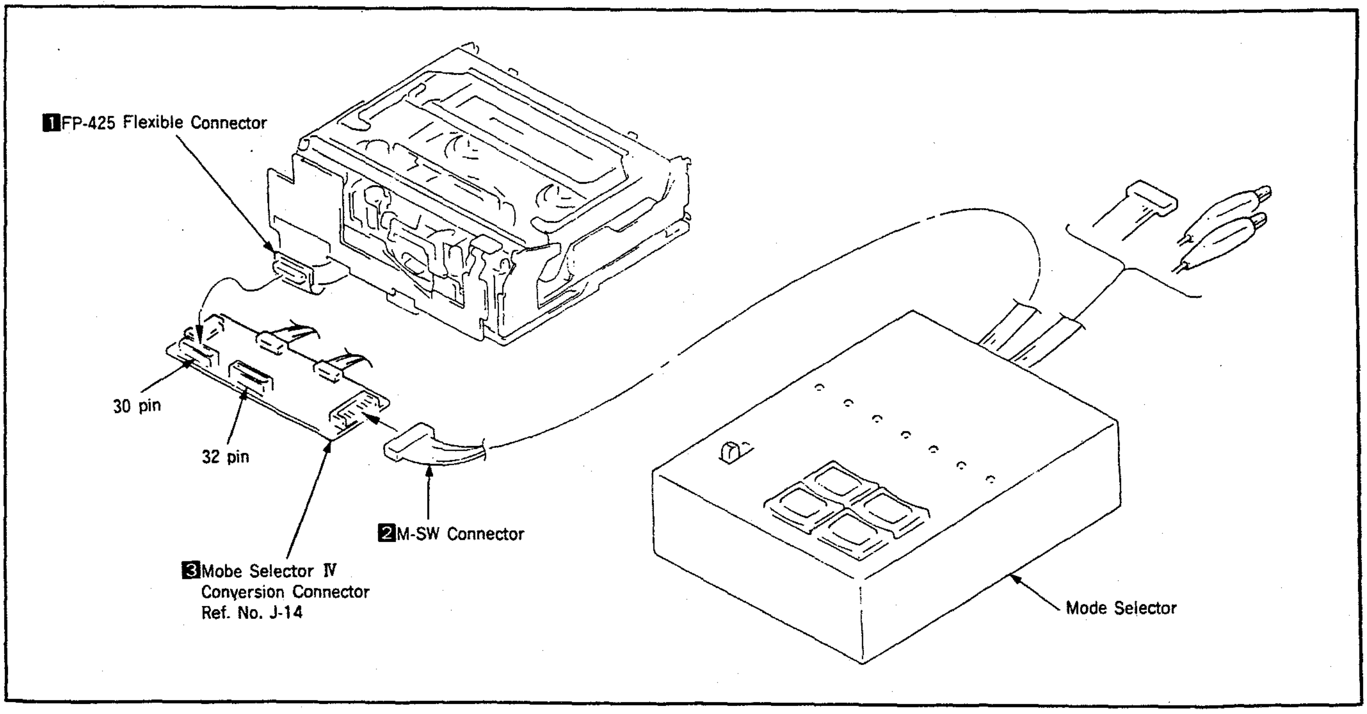
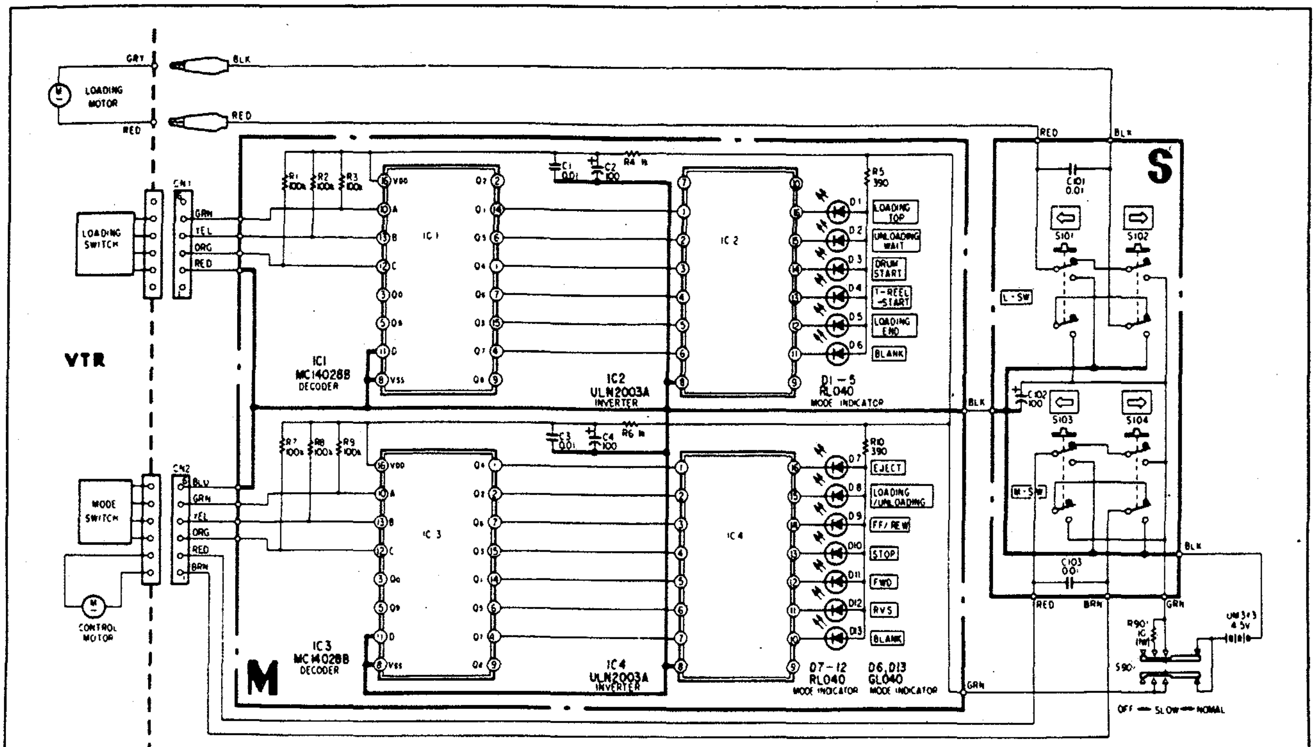

1 FP-425 Flexible Connector
30 pin
32 pin
2 M-SW Connector
3 Mobe Selector IV
Conversion Connector
Ref. No. J-14
Mode Selector

Fig. 6

1-4. MODE SELECTOR SCHEMATIC DIAGRAM


LOADING MOTOR
GRY
BLK
RED
VTR
LOADING SWITCH
CN1
GRN
YEL
ORG
MODE SWITCH
CN2
BLU
BRN
CONTROL MOTOR
R1 100k
R2 100k
R3 100k
R4 1k
R5 390
C1 0.01
C2 100
IC1
MC14028B
DECODER
IC2
ULN2003A
INVERTER
D1 – 5
RL040
MODE INDICATOR
LOADING TOP
UNLOADING WAIT
DRUM START
T-REEL -START
LOADING END
BLANK
R7 100k
R8 100k
R9 100k
R6 1k
R10 390
C3 0.01
C4 100
IC3
MC14028B
DECODER
IC4
ULN2003A
INVERTER
EJECT
LOADING /UNLOADING
FF/REW
STOP
FWD
RVS
D7 – 12
RL040
MODE INDICATOR
D6, D13
GL040
MODE INDICATOR
VDD
VSS
M
S
C101 0.01
S101
S102
L-SW
C102 100
S103
S104
M-SW
C103 0.01
R901 10 (1W)
UM3×3 4.5V
S901
OFF ⟵ SLOW ⟵ NOMAL

M-SW (IC 3)

DECODER INPUT			MODE	LED NO
C	B	A		
0	0	0		
0	0	1	FWD	D11
0	1	0	LOADING/UNLOADING	D8
0	1	1	STOP	D10
1	0	0	EJECT	D7
1	0	1	RVS	D12
1	1	0	FF/REW	D9
1	1	1	BLANK	D13

0 : INPUT LEVEL L
1 : INPUT LEVEL H

L-SW (IC 1)

DECODER INPUT			MODE	LED NO
C	B	A		
0	0	0		
0	0	1	LOADING TOP	D1
0	1	0		
0	1	1	LOADING END	D5
1	0	0	DRUM START	D3
1	0	1	UNLOADING WAIT	D2
1	1	0	T-REEL - START	D4
1	1	1	BLANK	D6

SWITCH		DIRECTION OF MOTOR REVOLUTION
⇦	⇨	
OFF	OFF	STOP
ON	OFF	⇦
OFF	ON	⇨

⇦ L-SW LOADING END ⟵ LOADING TOP
M-SW RVS ⟶ EJECT

⇨ L-SW LOADING TOP ⟵ LOADING END
M-SW EJECT ⟶ RVS

1-5. MODE SELECTOR PARTS LIST

Ref. No	Part No.	Description		
		CAPACITOR		
C1	1-108-579-00	MILER	0.01μF	50V
C2	1-123-333-00	ELECT	100μF	24V
C3	1-108-579-00	MILER	0.01μF	50V
C4	1-123-333-00	ELECT	100μF	24V
C101	1-108-579-00	MILER	0.01μF	50V
C102	1-123-333-00	ELECT	100μF	24V
C103	1-108-579-00	MILER	0.01μF	50V
		DIODE		
D1	8-719-812-31	DIODE TLR123		
D2	8-719-812-31	DIODE TLR123		
D3	8-719-812-31	DIODE TLR123		
D4	8-719-812-31	DIODE TLR123		
D5	8-719-812-31	DIODE TLR123		
D6	8-719-812-33	DIODE TLG123A		
D7	8-719-812-31	DIODE TLR123		
D8	8-719-812-31	DIODE TLR123		
D9	8-719-812-31	DIODE TLR123		
D10	8-719-812-31	DIODE TLR123		
D11	8-719-812-31	DIODE TLR123		
D12	8-719-812-31	DIODE TLR123		
D13	8-719-812-33	DIODE TLG123A		

Ref. No	Part No.	Description		
		IC		
IC1	8-752-240-28	IC TC4028BP		
IC2	8-752-120-03	IC μPA2003C		
IC3	8-759-240-28	IC TC4028BP		
IC4	8-759-120-03	IC μPA2003C		
		RESISTOR		
R1	1-247-179-00	CARBON	100K	1/4W
R2	1-247-179-00	CARBON	100K	1/4W
R3	1-247-179-00	CARBON	100K	1/4W
R4	1-247-131-00	CARBON	1K	1/4W
R5	1-247-121-00	CARBON	390	1/4W
R6	1-247-131-00	CARBON	1K	1/4W
R7	1-247-179-00	CARBON	100K	1/4W
R8	1-247-179-00	CARBON	100K	1/4W
R9	1-247-179-00	CARBON	100K	1/4W
R10	1-247-121-00	CARBON	390	1/4W
R901	1-214-594-00	METAL	10	1W

2. PERIODIC CHECK AND MAINTENANCE

- *Carry out the following maintenance and periodic checks in order not only to fully exhibit the functions and performance of the set, but also for the equipment and tape. After repairing, service the set as follows, regarless of the length of use.*

2-1. CLEANING OF ROTARY DRUM ASSEMBLY

1) Gently apply chamois cloth (Ref. No. J-2) soaked in cleaning liquif (Ref. No.J-1) to the rotary drum assembly.
   Clean it by rotating the upper rotary drum assembly slowly counterclockwise by hand.

Note : Do not rotate the motor by power or rotate the upper rotary drum assembly clockwise by hand. Also, the head tip is highly likely to be damaged if the chamois cloth is moved in a pependicular direction to the it. make sure to follow the instructions above for cleaning the rotarydrum assembly.

2-2. CLEANING OF TAPE PATH (Fig.7)

1) In the USE mode, clean the tape running system (TG - 1,- 2,- 3,- 4,- 5, - 6, - 7, pinch roller, and capstan shaft) and the lower drum, using a super fine applicator (Ref. No. J - 3) soaked in the cleaning liquid.

Note : Note that no oil or grease of each link mechanism adheres to the super fine applicator (Ref. No. J - 3).

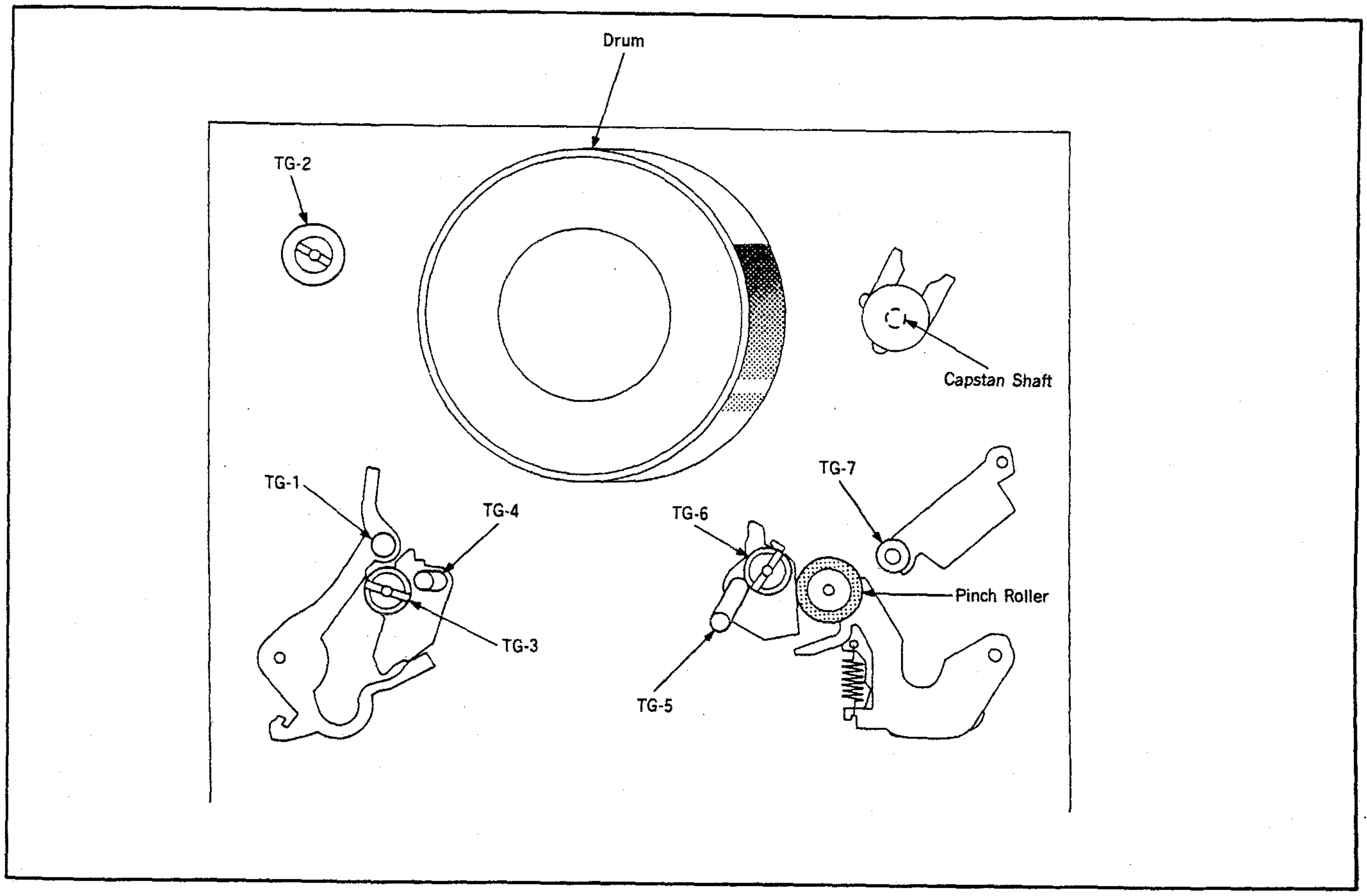


Fig. 7

2-3. PERILDIC CHECK ITEMS

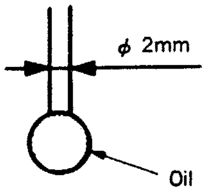
	Location of Maintenance and check	Hours of Use (H)										Remarks
		500	1000	1500	2000	2500	3000	3500	4000	4500	5000	
Tape trans-portion System	Cleaning of tape path surface	○	○	○	○	○	○	○	○	○	○	Be careful of oil
	Cleaning and degaussing of rotary assembly	○	○	○	○	○	○	○	○	○	○	Be careful of oil
Driving System	Relay belt	—	☆	—	☆	—	☆	—	☆	—	☆	3-944-539-01
	Capstan shaft	—	◎	—	◎	—	◎	—	◎	—	◎	Be adsolutely careful not to get oil on the tape path surface.
	Relay pulley shaft	—	◎	—	◎	—	◎	—	◎	—	◎	
	Loading motor	—	☆	—	☆	—	☆	—	☆	—	☆	A-7040-304-A
Performance Confirmation	Abnormal noise	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	
	Back tension measurement	—	☆	—	☆	—	☆	—	☆	—	☆	
	Brake system	—	☆	—	☆	—	☆	—	☆	—	☆	
	FWD. RVS torque measurement	—	☆	—	☆	—	☆	—	☆	—	☆	

○ : Cleaning ◎ : Oil ☆ : Confirmation

Note : When overhauling, refer to the items above to replace parts.

Note : Concerning oil

- Be sure to use specified oil. (If you use oil with different viscosity, etc., it may cause troubles.)
  Oil : Part No. 7-661-018-18 (Mitsubishi Diamond Oil Hydrofluid NT - 68)
- When lubricating bearings, be sure use oil free from dust, etc. (If you use oil with dust, etc. contained, it may cause bearings to be worn out or seized.)
- A drip of oil refers to an amount attached to the tip of a ϕ 2mm stick shown in the right figure.

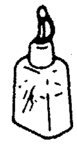


2-4. Service jigs list

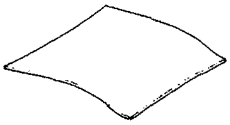
Ref. No.	Name	Part No.	Fixture No.	Usage and Others
J-1	Cleaning fluid	Y-2031-001-0		
J-2	Chamois cloth	2-034-697-00		
J-3	Super fine applicator (Made by NIPPON APPLICATOR, P752D)			
J-4	Head degausser	Widely available		
J-5	Small mirror for adjustment Spare mirror	J-6080-029-A J-6080-030-1	SL-5052	Tape path
J-6	Alignment tape NTSC (WR5-1N) PAL (WR5-1C)	8-967-995-01 8-967-995-06		Tape path
J-9	FWD and RVS winding torque cassette	J-6080-824-A	GD-2086	
J-10	Rotary drum jig	(Attached to the maintenance rotary upper drum)		
J-11	Screwdriver for tape path	J-6082-026-A		For tape guide adjustment
J-12	Mode selector Ⅳ panel	J-6082-105-A		
J-13	Mode selector	J-6080-825-A		For all models
J-14	Mode selector Ⅳ conversion connector	J-6082-167-A		
J-15	FWD B.T. adjusting driver	J-6082-182-A		
J-16	Adjusting remote controller	J-6082-053-B		Tape path (Setting of PATH mode)
J-17	MD process table label	J-6082-166-A		

Other equipment
- Oscilloscope
- Analog tester (20 kΩ)

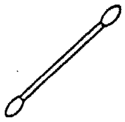
J-1



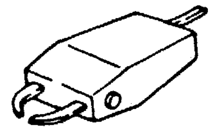
J-2



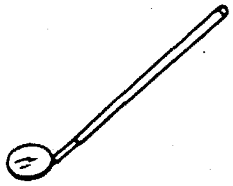
J-3



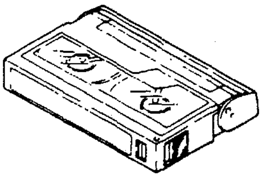
J-4



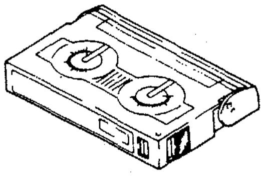
J-5



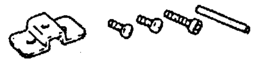
J-6



J-9

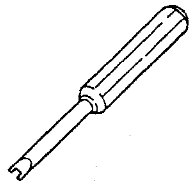


J-10

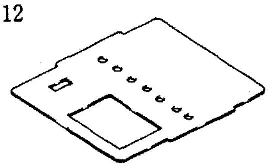


(Attached to the maintenance rotary upper drum)

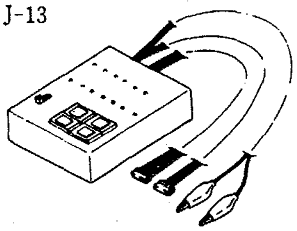
J-11



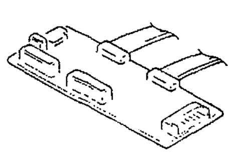
J-12



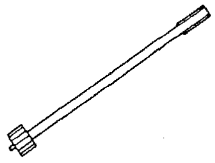
J-13



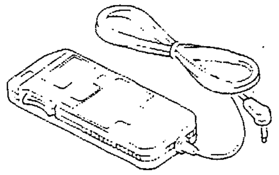
J-14



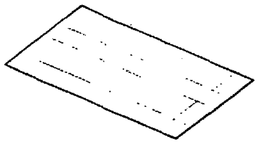
J-15



J-16



J-17



3. MECHANICAL CHECK, ADJUSTMENT AND REPLACEMENT

Note : Use the mode selector (Ref. No. J-13) for the following mechanical checks, adjustments and replacements.

Note : The modes in ☐ are those set by pressing the mode selector buttons.

3-1. RETAINER, GOOSENECK ASSEMBLY (Fig. 8)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Remove a screw 1.
3) Remove the Retainer, Gooseneck assembly 2.

2. Mounting

1) Mount the Retainer, Gooseneck assembly 2 with its two tabs and holes of LS chassis engaged with its hole and a boss of LS chassis.
2) Tighten the screw 1.
3) Referring to 1-1, mount the cassette compartment assembly.

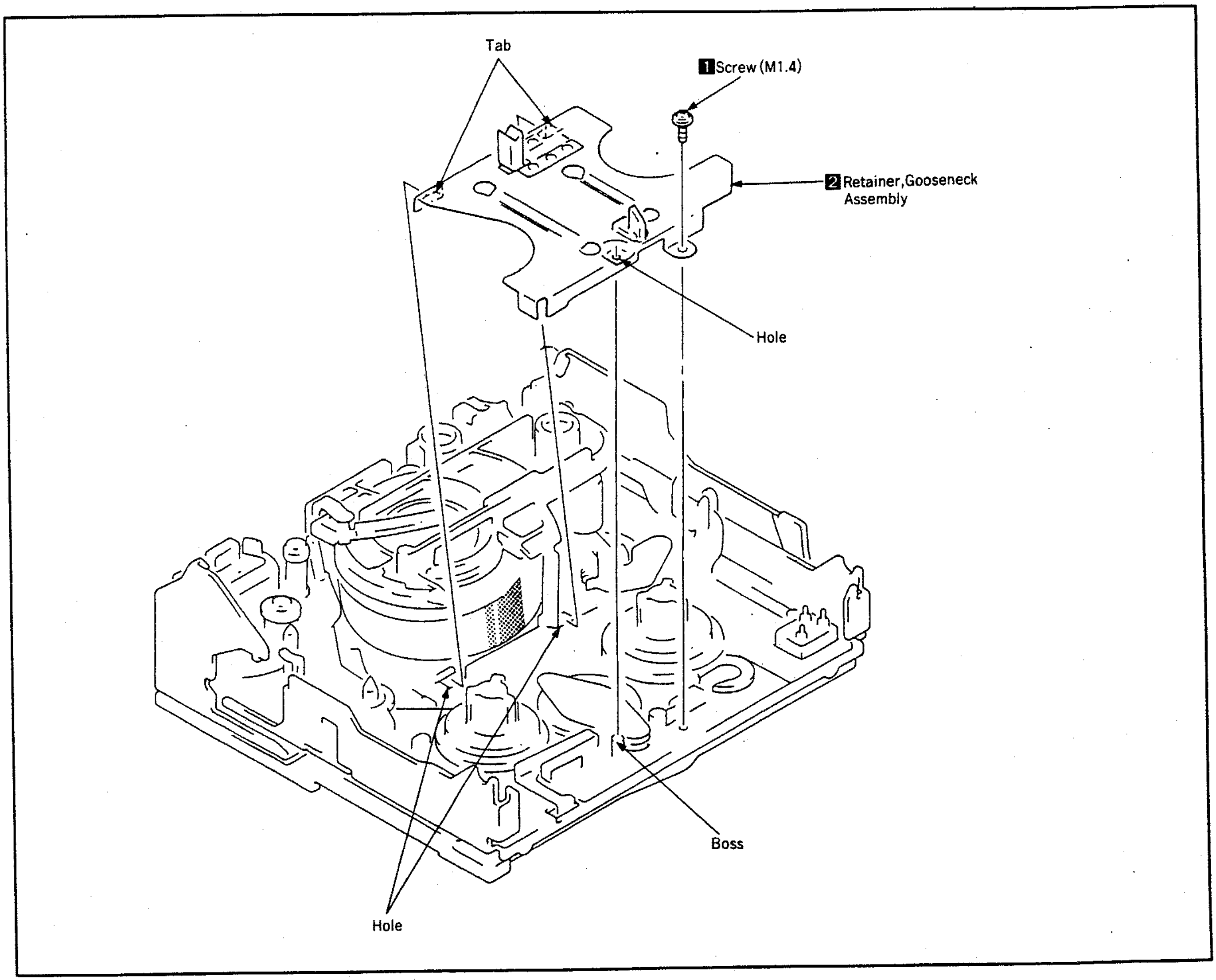


Fig. 8

3-2. PROTECTOR BASE ASSEMBLY (Fig. 9)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Remove two screws ❶, then the protector base assembly ❷.

2. Mounting

1) Mount the protector base assembly ❷ with its three holes engaged with two dowels of mechanical chassis, and a dowel of TG-5 Base Holder ❸.
2) Tighten two screws ❶.
3) Referring to 1-1, mount the cassette compartment assembly.

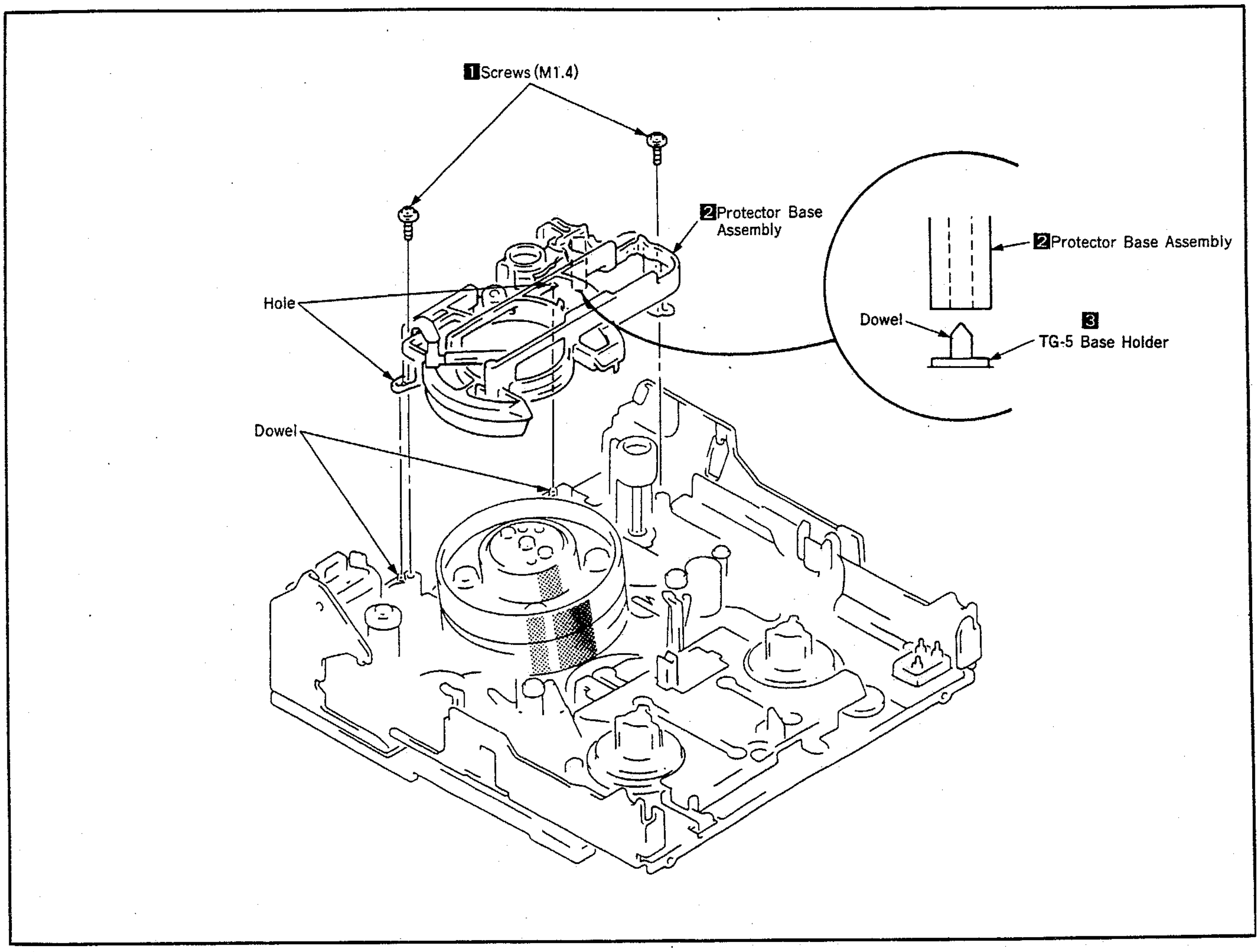

❶Screws (M1.4)
❷Protector Base Assembly
Hole
Dowel
Dowel
❷Protector Base Assembly
❸
TG-5 Base Holder

Fig. 9

3-3. DRUM ASSEMBLY (Fig. 10)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Referring to 3-2, remove the protect base assembly.
3) Disconnect the connector of FP-444 flexible board 1 on the back of MD.
4) Remove three screw 2, then the drum assembly 3.

Note : Do not touch the outer surfaced of drum (hold portions Ⓐ and Ⓑ of drum).

2. Mounting

1) Mount the drum assembly 3 while aligning with two dowels ⓐ of chassis.

Note : Do not touch the outer surfaced of drum (hold portions Ⓐ and Ⓑ of drum).

2) Tighten three screw assemblies 2 in the order of 1, 2 and 3.

Note : Tighten lightly not to deform the drum lead.

3) Apply a screw locking agent to prevent screws ftom loosening.

Note : In tightening the screws, pushing down the drum extremely will allow the drum to float up.

4) Connect the connector of FP-444 flexible board 1 on the back of MD.
5) Referring to 3-2, mount the protect base assembly.
6) Referring to 1-1, mount the cassette compartment assembly.

Note : After mounting, make tape path adjustment in Section 4.

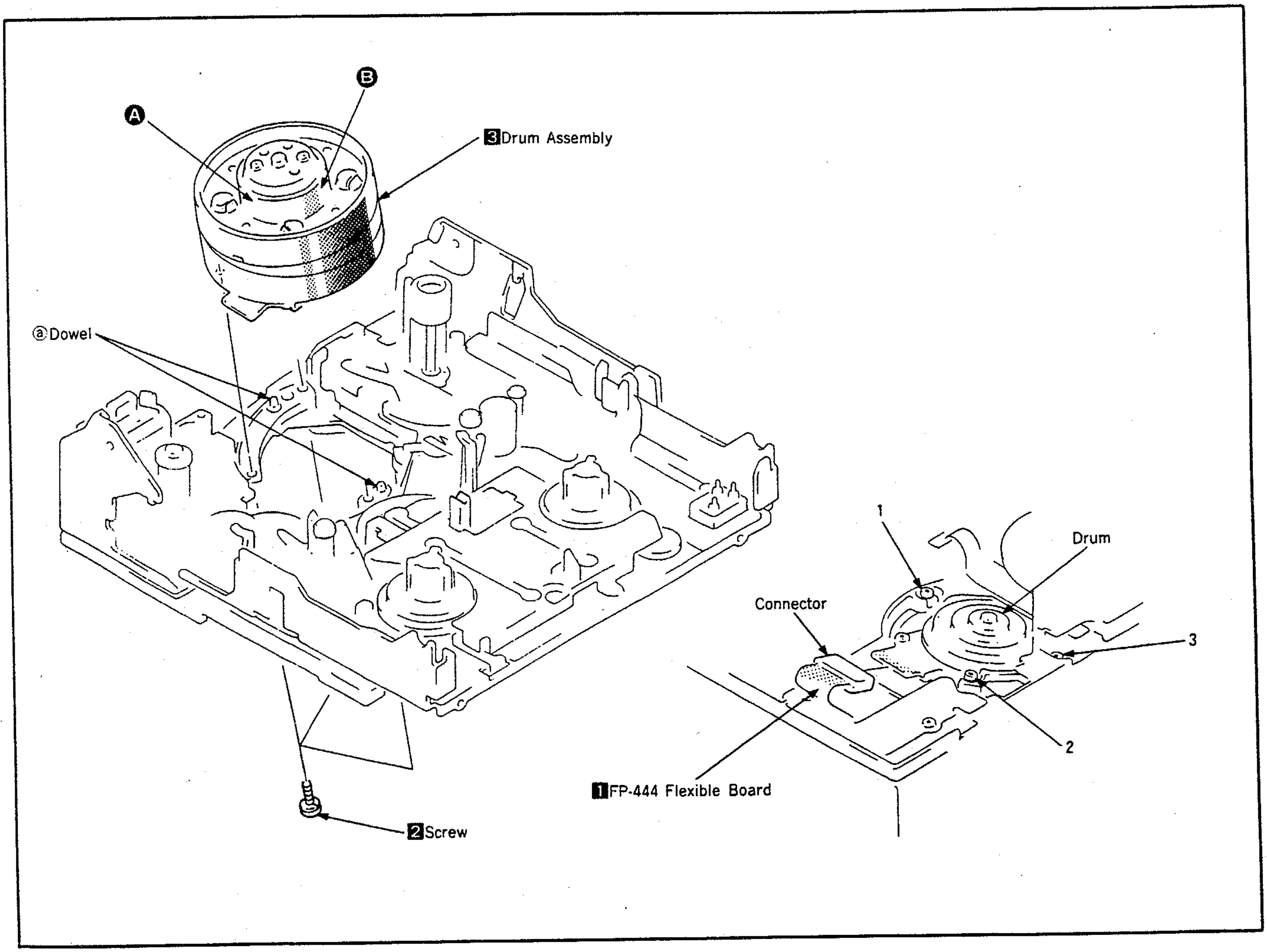


Fig. 10

3-4. CAPSTAN MOTOR ASSEMBLY (Fig. 11)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Remove two screw 1, then the capstan cover 2.
3) Remove the screw 3, then the capstan motor assembly 4.

2. Mounting

1) Mount the capstan motor assembly 4 and tighten the screw 3.

Note : In mounting the capstan motor assembly, hold lightly the capstan motor assembly until the rotor gear aligns with the change gear Assy, then insert fully the assembly when both gears are engaged completely by manually rotating the rotor. (Take care not to damage the change gear Assy.)

2) Mount the capstan cover 2 and tighten two screws 1.
3) Referring to 1-1, mount the cassette compartment assembly.

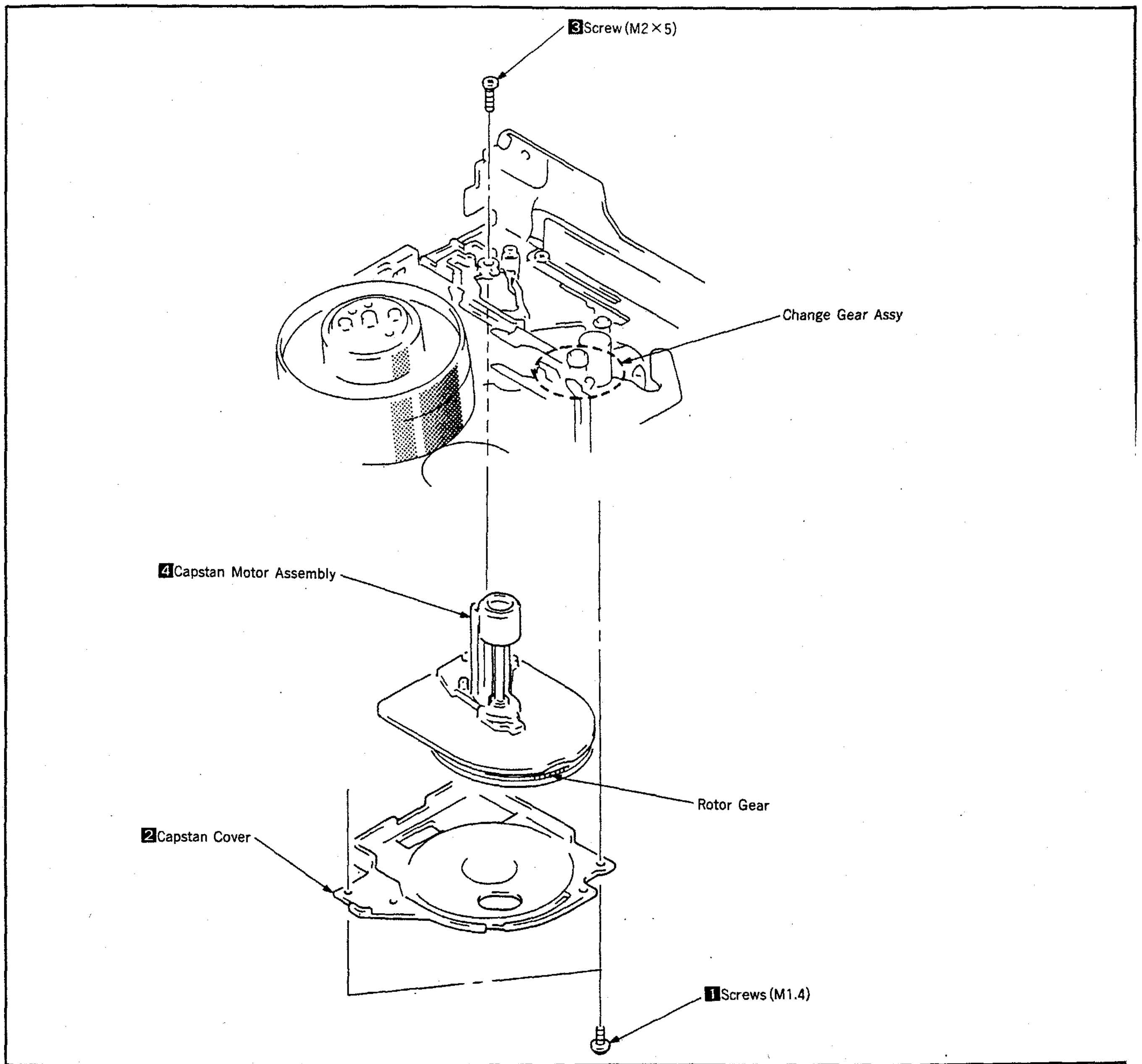

3 Screw (M2×5)
Change Gear Assy
4 Capstan Motor Assembly
Rotor Gear
2 Capstan Cover
1 Screws (M1.4)

Fig. 11

3-5. TAKE-UP REEL TABLE ASSEMBLY AND T- SOFT ASSEMBLY (Fig. 12)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
3) Remove the take-up reel table assembly ❶.
4) Remove the T soft assembly ❷, then the T soft arm ❸.

2. Mounting

1) Mount the T soft arm ❸ with its long hole ⓒ engaged with the boss ⓓ of LS chassis.
2) Mount the T soft assembly ❷ with its tab ⓐ engaged with a square hole ⓑ of T soft arm, as shown in Fig. a.
3) Mount the take-up reel table assembly ❶ and rotate it toward the arrow 🅐 to be latched with T hard claw.
4) Referring to 3-1. mount the Retainer, Gooseneck assembly.
5) Referring to 1-1, mount the cassette compartment assembly.

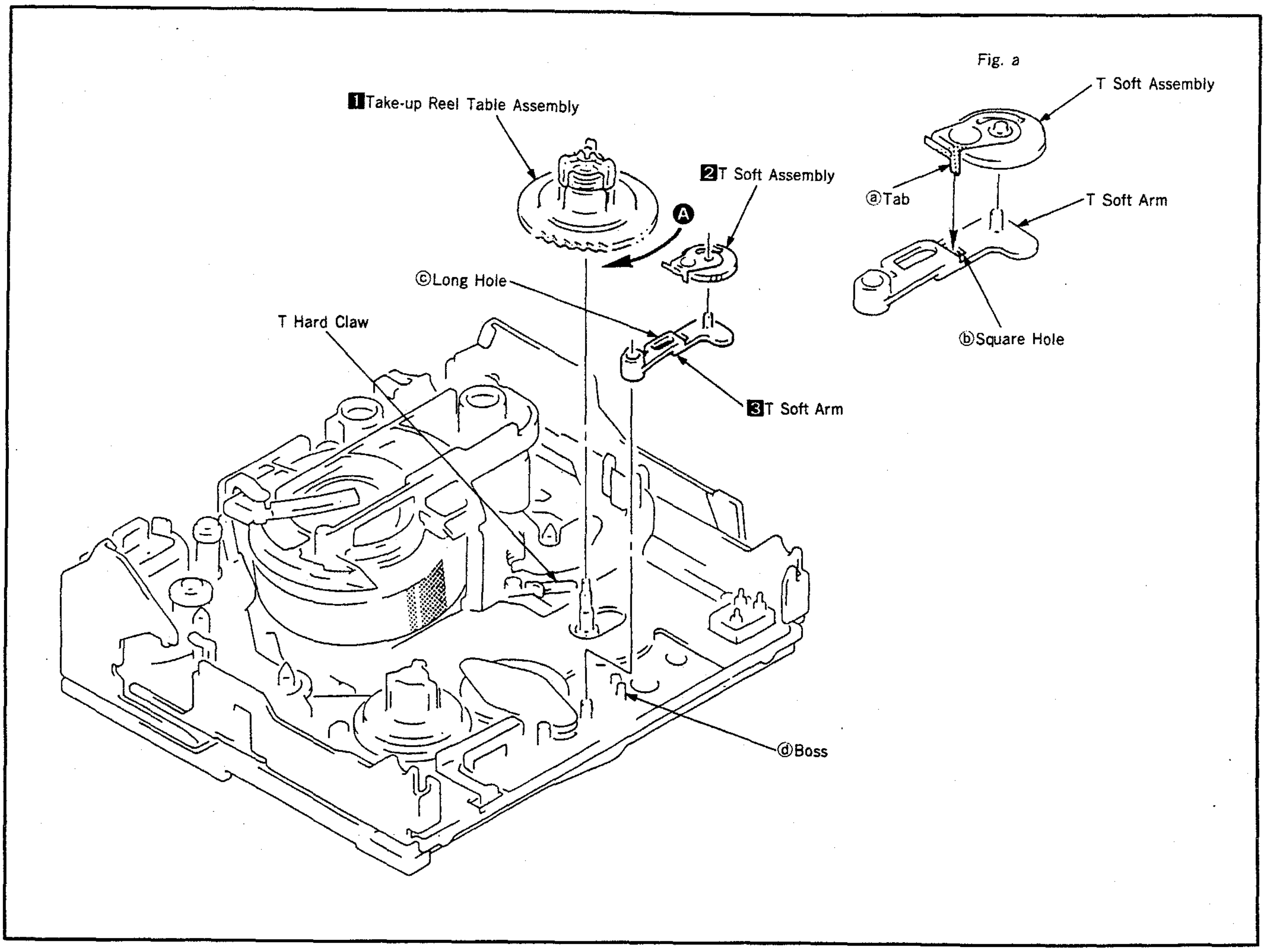

❶Take-up Reel Table Assembly
❷T Soft Assembly
🅐
ⓒLong Hole
T Hard Claw
❸T Soft Arm
ⓓBoss
Fig. a
T Soft Assembly
ⓐTab
T Soft Arm
ⓑSquare Hole

Fig. 12

3-6. PINCH ARM ASSEMBLY (Fig. 13)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Select the READY mode.
3) Remove a washer ❶, then the pinch arm assembly ❷.

2. Mounting

1) Select the READY mode.
2) Hooking a spring of pinch arm assembly ❷ to the cassett positioning boss on the chassis, mount the pinch arm assembly on the shaft of LS chassis assembly as shown in Fig. a.
3) Push in the spring with tweezers up to the root of boss a shown in Fig. b.
4) Mount the washer ❶.
5) Referring to 1-1, mount the cassette compartment assembly.

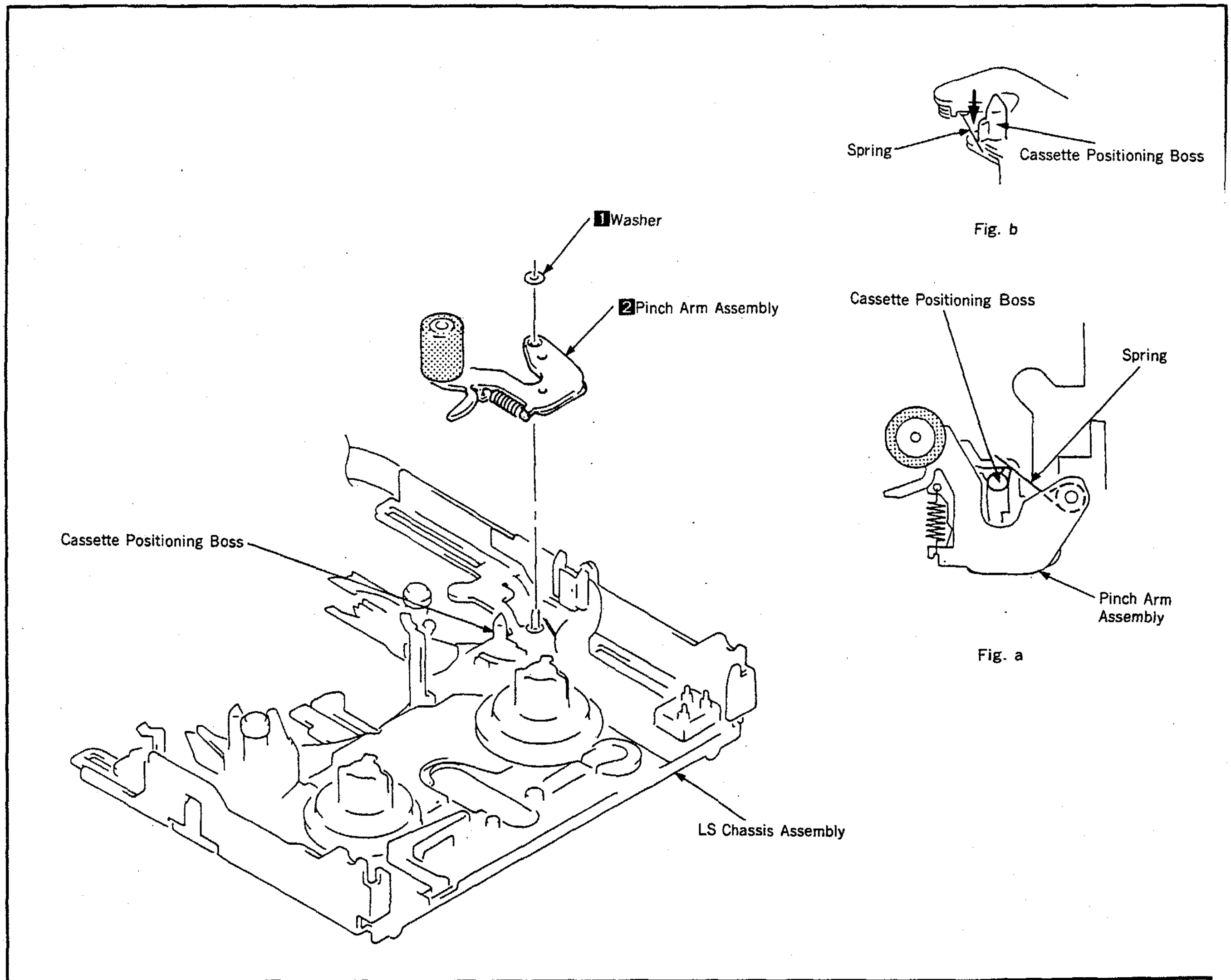

❶Washer
❷Pinch Arm Assembly
Cassette Positioning Boss
LS Chassis Assembly
Spring
Cassette Positioning Boss
Cassette Positioning Boss
Spring
Pinch Arm Assembly

Fig. b

Fig. a

Fig. 13

3-7. LS CHASSIS ASSEMBLY (Fig. 14)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
3) Referring to 3-2, remove the protector base assembly.
4) Remove a screw ❶, TG-5 base holder ❷, and LS flexible board ❸.
5) Remove a lock washer ❹, then the gooseneck as sembly ❺.
6) Remove four screws ❻, then the LS chassis assembly ❼.

2. Mounting

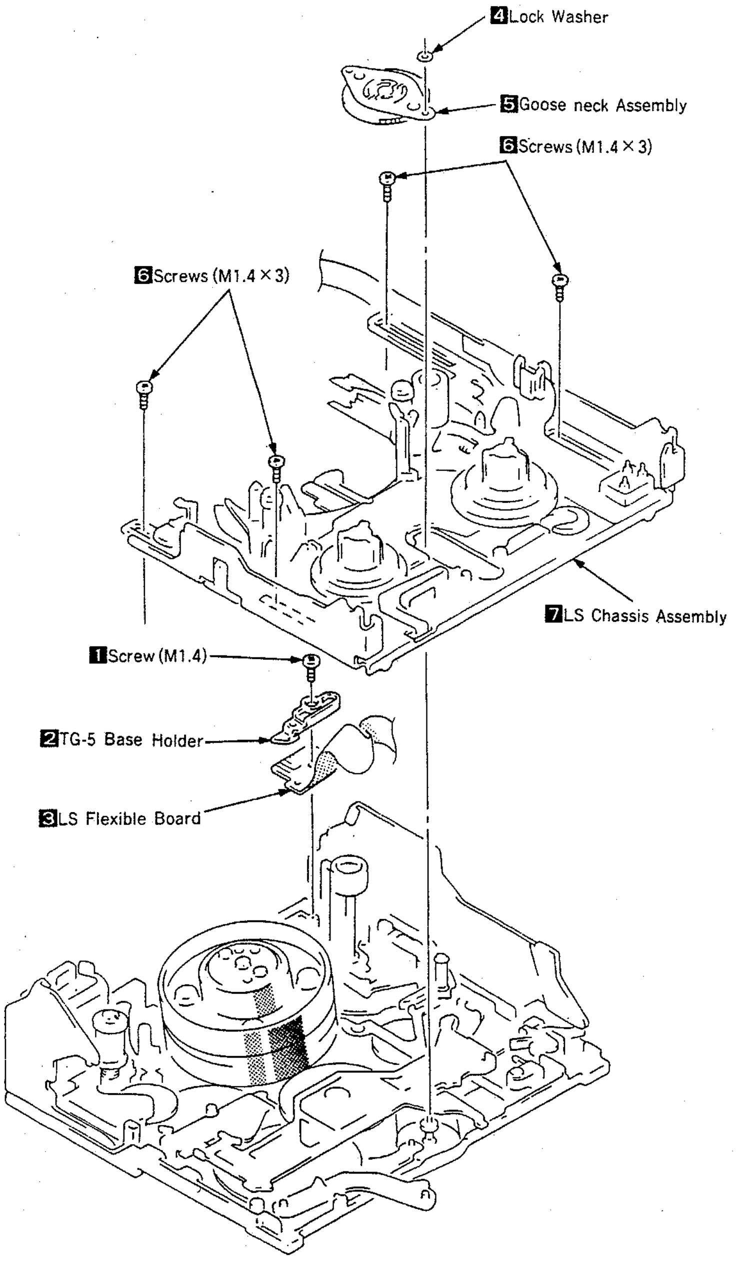
1) Select the $\boxed{\text{USE}}$ mode.
2) Confirm that the T hard claw and the outsert on the back of LS chassis are positioned as shown in Fig. a. (The T hard claw must be higher than corner ⓐ of chassis hole.) If not high, turn the outsert in the arrow direction while pushing the T hard claw from LS chassis to the chassis.
3) Sliding the GL slider, align the top edge of long hole ⓑ in GL slider with the edge face ⓒ of LS chassis hole as shown in Fig. b.
4) Mount the LS chassis assembly ❼ on the chassis.

Note : At this time, aligh a dowel ⓓ on LS chassis with a long hole ⓔ of No.7 guide on chassis, a long hole of GL slider with a GL arm pin, a groove of LS cam plate with an LS arm pin respectively as shown in Fig. c and d.

5) Tighten four screws ❻.
6) Mount the LS flexible board ❸ and TG-5 base holder ❷,then tighten the screw ❶.
7) Mount the Gooseneck assembly ❺ and fix it with a washer ❹.

Note : Using the mode selector, confirm that loading and unloading are performed smoothly.

8) **Referring to 3-2, mount the protector base assembly.**
9) **Referring to 3-1, mount the Retainer, Gooseneck assembly.**
10) **Referring to 1-1, mount the cassette compartment assembly.**


4 Lock Washer
5 Goose neck Assembly
6 Screws (M1.4 × 3)
6 Screws (M1.4 × 3)
7 LS Chassis Assembly
1 Screw (M1.4)
2 TG-5 Base Holder
3 LS Flexible Board

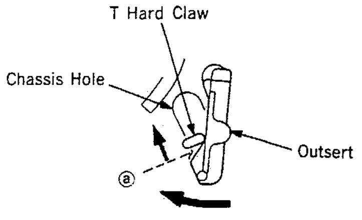

T Hard Claw
Chassis Hole
Outsert
ⓐ

Fig. a

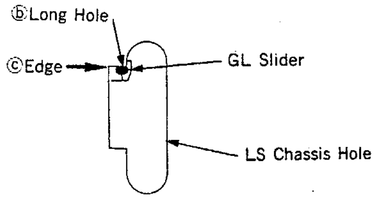

ⓑ Long Hole
ⓒ Edge
GL Slider
LS Chassis Hole

Fig. b

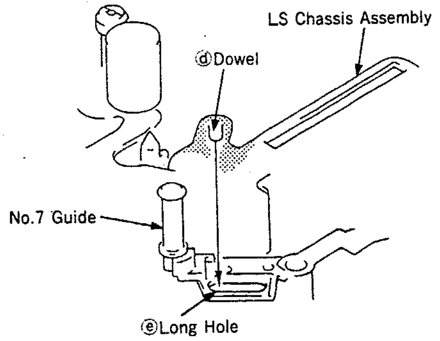

LS Chassis Assembly
ⓓ Dowel
No.7 Guide
ⓔ Long Hole

Fig. c

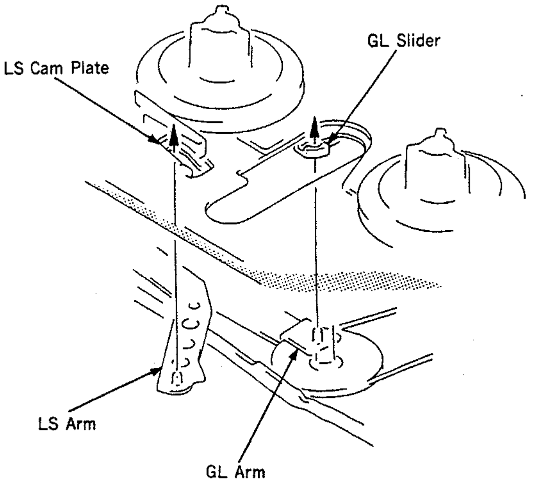

LS Cam Plate
GL Slider
LS Arm
GL Arm

Fig. d

Fig. 14

3-8. GUIDE BASE T ASSEMBLY AND GUIDE BASE S ASSEMBLY (Fig. 15, 16)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Referring to 3-1, remove the Retainer Gooseneck assembly.
3) Referring to 3-2, remove the protector base assembly.
4) Referring to 3-7, remove the LS chassis assembly.
5) Push in the GL slider 1 toward the arrow Ⓐ, and remove the guide base T assembly 2 and guide base S assembly 3 from the guide rail respectively as shown in Fig. 15.

Note : Do not invert the LS chassis up side down, otherwise the T reel table assembly, T soft arm and T sofr assembly will drop. Also, take care not to allow the S reel table to float up, or the tension regulator string bends. (Refer to 3-5 T Reel Table Assembly and T Soft Assembly, and 3-10 S Reel Table Assembly and TG-1 Arm Assembly.)

6) Turning the guide base T assembly 2 and guide base S assembly 3 respectively, align the shaft to hole to remove as shown in Fig. a.

2. Mounting

1) Turning the guide base T assembly 2 and guide base S assembly 3 respectively, align the shaft with a hole to mount as shown in Fig. a (Fig. 15).
2) On the back side of chassis, insert the guide arm T assembly 4, guide arm S assembly 5 and GL slider 1 from position shown in Fig.b to position shown in Fig. c. Also, aligning the guide base T assembly 2 and guide base S assembly 3 with the respective guide rails, push in the GL slider 1 toward the arrow Ⓑ as shown in Fig. 16.

Note : Do not invert the LS chassis up side down, otherwise the T reel table assembly, T soft arm and T soft assembly will drop. Also, take care not to allow the S reel table to float up, or the tension regulator string bends. (Refer to 3-5 T Reel Table Assembly and T Soft Assembly, and 3-10 S Reel Table Assembly and TG-1 Arm Assembly.)

3) Referring to 3-7, mount the LS chassis assembly.
4) Referring to 3-2, mount the protector base assembly.
5) Referring to 3-1, mount the Retainer, Gooseneck assembly.

Note : At this time, confirm that the T soft assembly is surely engaged with the T soft arm.

6) Referring to 1-1, mount the cassette compartment assembly.

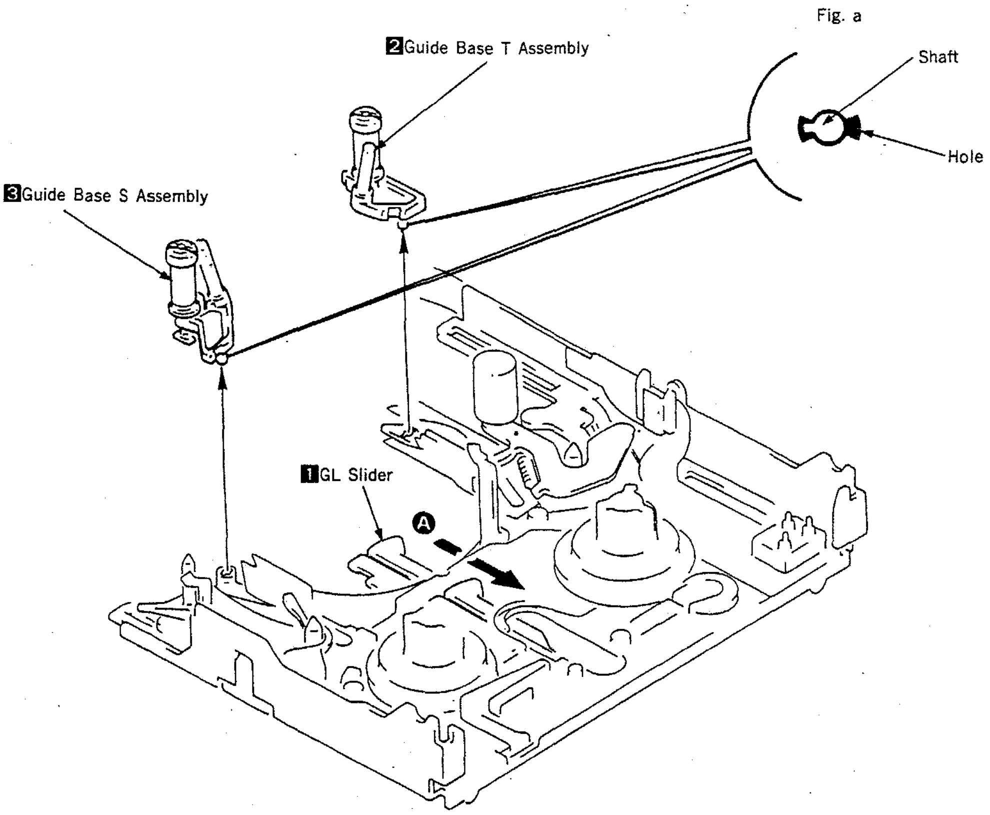


Fig. a
2 Guide Base T Assembly
Shaft
Hole
3 Guide Base S Assembly
1 GL Slider
A

Fig. 15

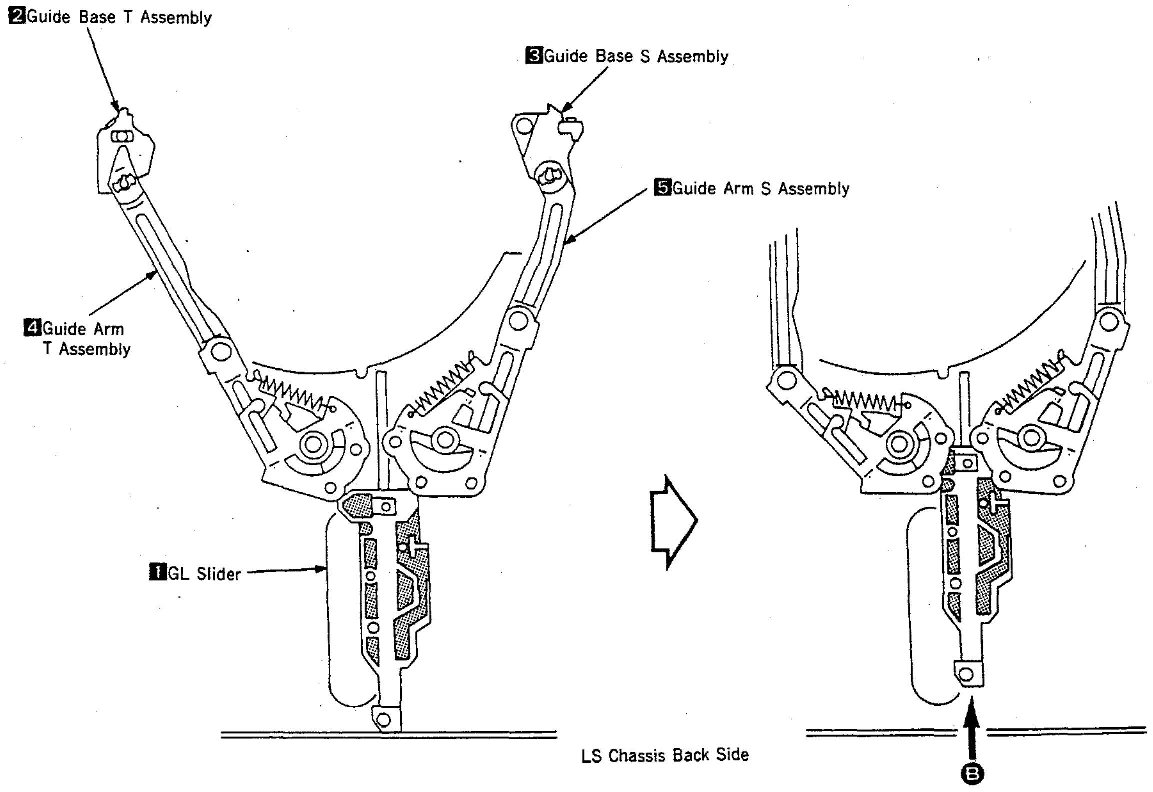

2 Guide Base T Assembly
3 Guide Base S Assembly
5 Guide Arm S Assembly
4 Guide Arm T Assembly
1 GL Slider
LS Chassis Back Side
B

Fig. b

Fig. c

Fig. 16

3-9. GUIDE ARM T ASSEMBLY AND GUIDE ARM S ASSEMBLY (Fig. 17)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
3) Referring to 3-2, remove the protector base assembly.
4) Referring to 3-7, remove the LS chassis assembly.
5) Referring to 3-8, remove the guide base T assembly and guide base S assembly.
6) Remove lock washers ❶, then the guide arm T assembly ❷ and guide arm S assembly ❸ respectively from the back side of chassis.

Note : Do not invert the LS chassis up side down, otherwise the T reel table assembly, T soft arm and T soft assembly will drop. Also, take care not to allow the S reel table to float up, or the tension regulator string bends. (Refer to 3-5 T Reel Table Assembly and T Soft Assmbly, and 3-10 S Reel Table Assembly and TG-1 Arm Assembly.)

2. Mounting

1) Mount the guide arm T assembly ❷ and guide arm S assembly ❸, then fix them with a lock washer ❶ respectively.

Note : Do not invert the LS chassis up side down, otherwise the T reel table assembly, T soft arm and T soft assembly will drop. Also, take care not to allow the S reel table to float up, or the tension regulator string bends. (Refer to 3-5 T Reel Table Assembly and T Soft Assembly, and 3-10 S Reel Table Assembly and TG-1 Arm Assembly.)

2) Referring to 3-8, mount the guide base T assembly, guide-base S assembly and GL slider.
3) Referring to 3-7, mount the LS chassis assembly.
4) Referring to 3-2, mount the protector base assembly.
5) Referring to 3-1, mount the Retainer, Gooseneck assembly.
6) Referring to 1-1, mount the cassette compartment assembly.

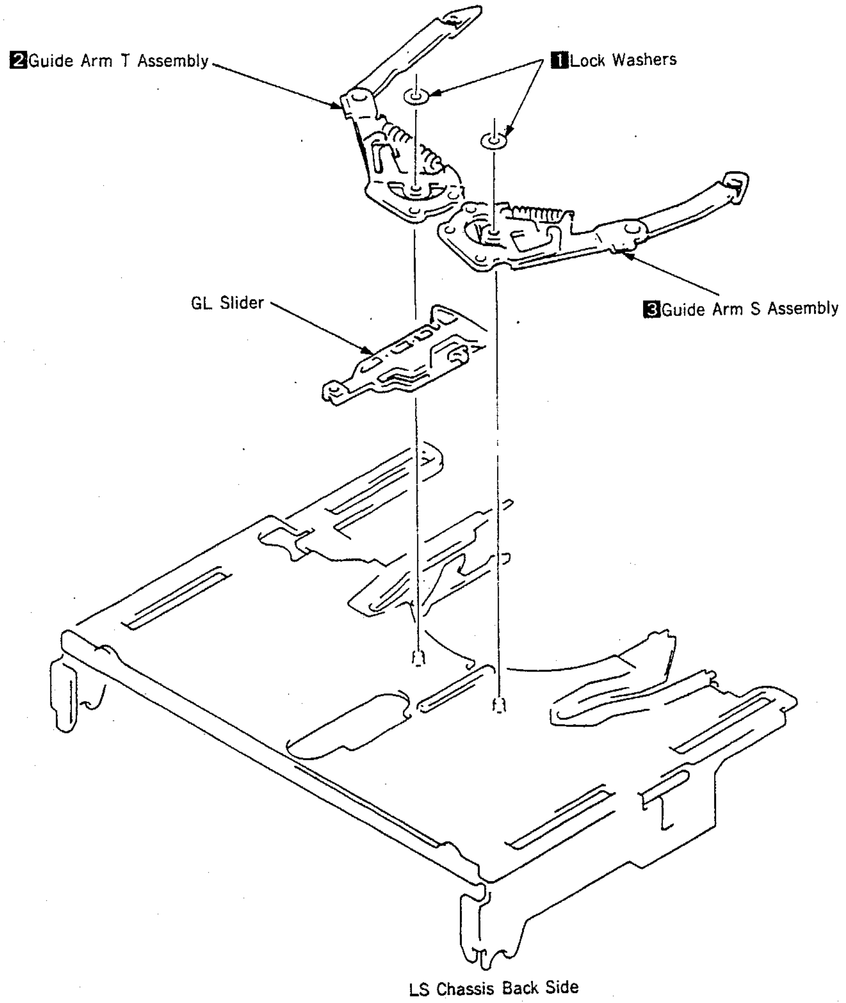


Fig. 17

3-10. SUPPLY REEL TABLE ASSEMBLY AND TG-1 ARM ASSEMBLY (Fig. 18)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
3) Referring to 3-2, remove the protector base assembly.
4) Referring to 3-7, remove the LS chassis assembly.
5) Referring to 3-8, remove the guide base S assembly.
6) Remove a screw 1, then the string 2 from the supply reel table assembly 3. For easy removal of string block 4, insert a flat-blade screwdriver into a groove ⓐ and push it up (Fig. a).
7) Remove the supply reel table assembly 3.
8) Remove a tension coil spring 5.
9) Turn the TG-1 arm assembly 6 up to a portion ⓒ of LS chassis hole in the arrow 🅐 direction so that its tab ⓑ can be disengaged (Fig. b).

2. Mounting

1) Pushing the S soft brake 7 toward the arrow 🅑, mount thesupply reel table assembly 3.
2) Route the string 2 under the TG-1 arm asembly 6, andinsert the tab ⓑ of TG-1 arm assembly into the LS chassis hole ⓒ, then turn the TG-1 arm assembly in the reverse direction of arow 🅐 (Fig. b).
3) Wind the string 2 along the groove of supply reel tab assembly 3 (Fig. a).

Note : Do not curl the string extremely. Also, avoid adhesion oil, otherwise the image will be distorted.

4) Using the FWD B.T. adjusting driver (Ref. No. J-15), sh the string block 4 toward the arrow 🅒 and tighten t screw 1 (Fig. a).
5) Engage the tension coil spring 5 to the chassis hook.

Note : Confirm that the string 2 is surely wound around the groove of supply reel table assembly 3 (Fig.a).

6) Referring to 3-8, mount the guide base S assembly.
7) Referring to 3-7, mount the LS chassis assembly.
8) Referring to 3-2, mount the protector base assembly.
9) Referring to 3-1, mount the Retainer, Gooseneck assembly

Note : At this time, confirm that the T soft assembly is sur engaged with the T soft arm. (Refer to 3-5 Take-up R Table Assembly and Take-up Soft Assembly.)

10) Referring to 1-1, mount the cassette compartment assembl

Note : Referring to 3-22, adjust the tension regulator position

Note : Referring to 3-23, adjust the forward back tension.

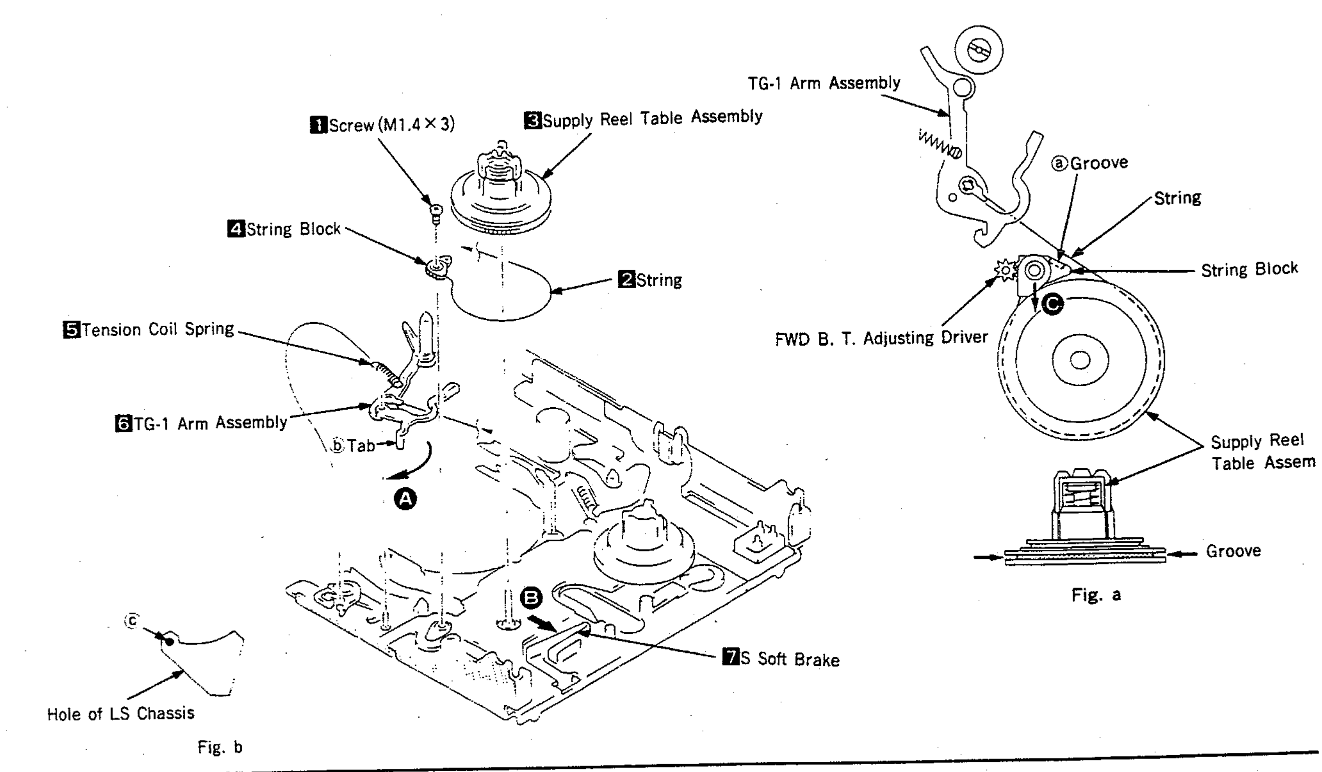

1 Screw (M1.4 × 3)
3 Supply Reel Table Assembly
4 String Block
2 String
5 Tension Coil Spring
6 TG-1 Arm Assembly
ⓑ Tab
🅐
🅑
7 S Soft Brake
ⓒ
Hole of LS Chassis
TG-1 Arm Assembly
ⓐ Groove
String
String Block
FWD B. T. Adjusting Driver
🅒
Supply Reel Table Assem
Groove

Fig. b

Fig. a

Fig. 18

3-11. TG-2 ROLLER ASSEMBLY (Fig. 19)

1. Removal

1) Remove the TG-2 roller assembly ❶ .
2) Remove a compression coil spring ❷ .

2.Mounting

1) Insert a compression coil spring ❷ into the boss on chassis.
2) Rotate gently the TG-2 roller assembly ❶ until the screw is engaged.

3. Presetting of TG-2 Roller Height (Fig. a)

1) Rotating the TG-2 upper flange, adjust the height of bottom face of TG-2 lower flange from the top face of dowel on the mechanical chassis to 3. 3 ± 0. 05mm.

Note : After adjustment, perform 4. TAPE PATH ADJUSTMENT.

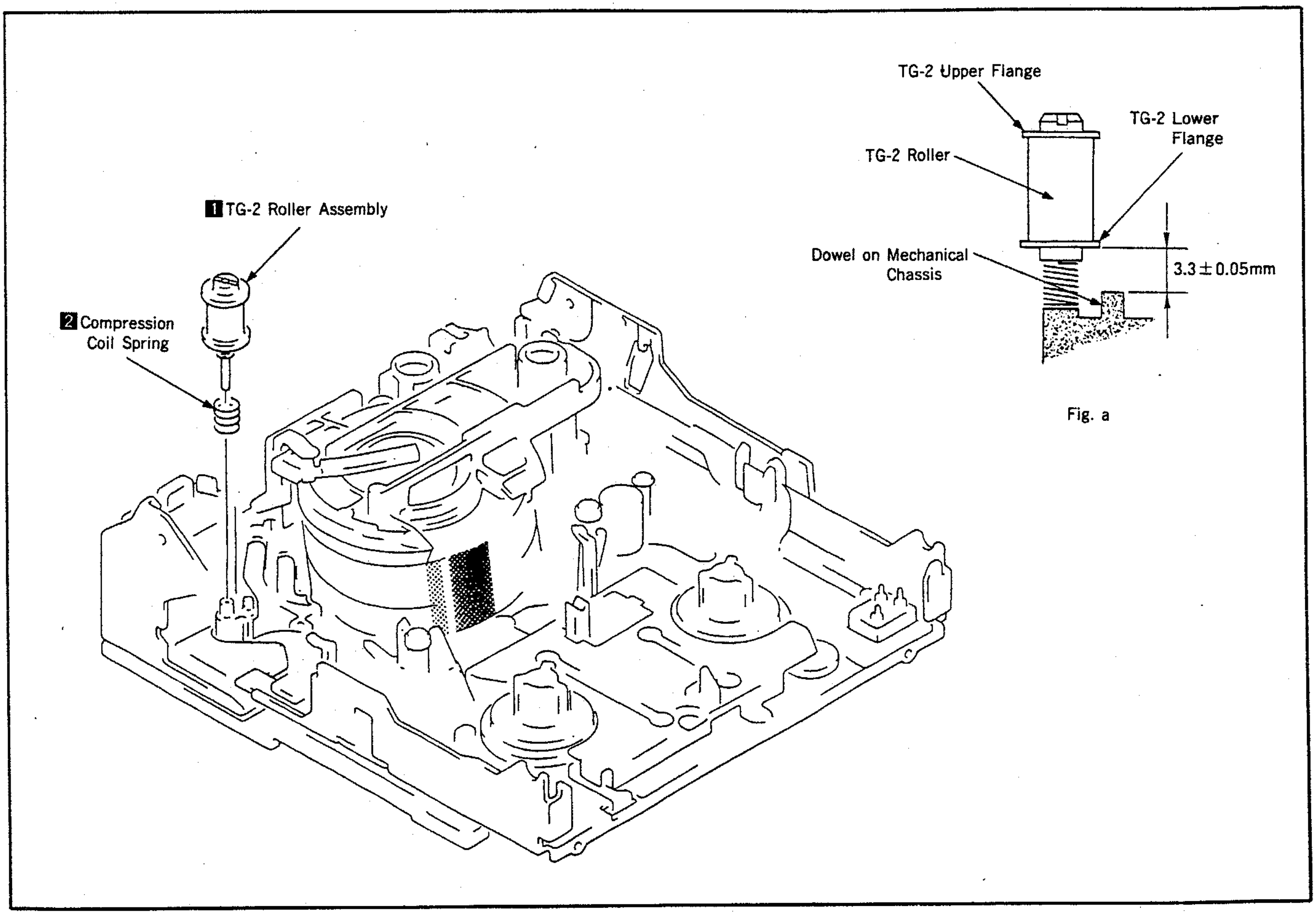

TG-2 Upper Flange
TG-2 Lower Flange
TG-2 Roller
Dowel on Mechanical Chassis
3.3±0.05mm
❶ TG-2 Roller Assembly
❷ Compression Coil Spring

Fig. a

Fig. 19

3-12. TG-7 ARM ASSEMBLY (Fig. 20)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
3) Referring to 3-2, remove the protector base assembly.
4) Referring to 3-7, remove the LS chassis assembly.
5) Raise a portion ⓐ of TG-7 arm Leaf spring ❶ in arrow direction with a flat-blade screwdriver or tweezers to disengage the tab from the chassis, then remove the TG-7 arm Leaf spring as shown in Fig. a.
6) Remove the TG-7 assembly ❷ from the shaft of mechanical-chassis.

2. Mounting

1) Mount the TG-7 arm assembly ❷ to the shaft of mechanical chassis.
2) Mount the TG-7 arm Leaf spring ❶ to the mechanicalchassis.
   * **Push in the tab of Leaf spring until it clicks into a deten** ofchassis (Fig. a).
3) Referring to 3-7, mount the LS chassis assembly.
4) Referring to 3-2, mount the protector base assembly.
5) Referring to 3-1, mount the Retainer, Gooseneck assembly.
6) Referring to 1-1, mount the cassette compartmnet assembly.

Note : After mounting, perform 4. TAPE PATH ADJUSTMENT.

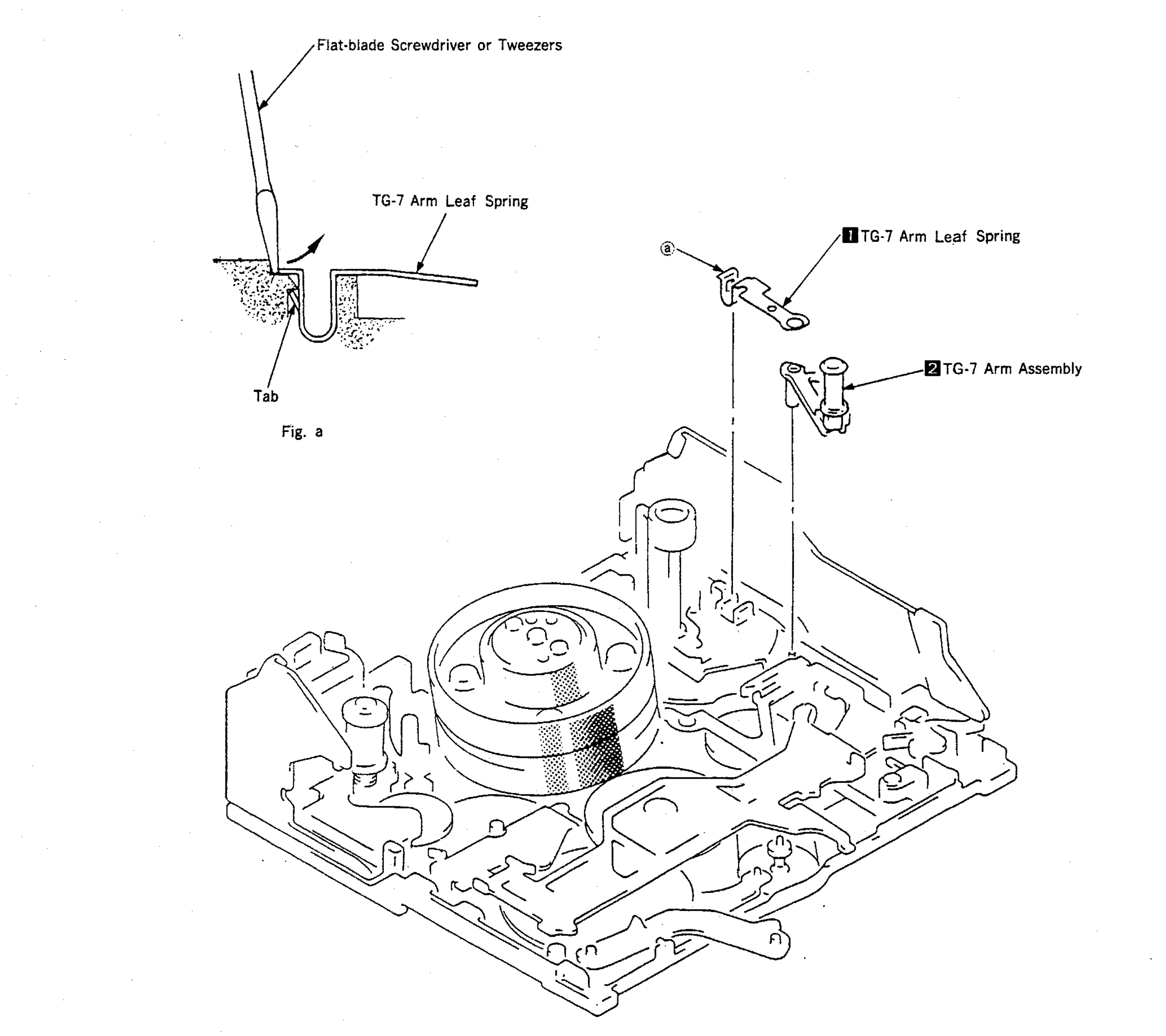


Fig. 20

3-13. LM MOTOR ASSEMBLY (Fig. 21)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
3) Referring to 3-2, remove the protector base assembly.
4) Referring to 3-7, remove the LS chassis assembly.
5) Select the LOAD mode (at the position where the FF arm assembly is not above the screw ❶).
6) Remove two screws ❶, then the LM motor assembly ❷.

2. Mounting

1) Aligning the dowel ⓐ of LM motor assembly ❷ with the hole ⓑ of mechanical chassis, mount the LM motor assembly with its hole ⓒ inserted into the mechanical chassis shaft ⓓ.
2) Tighten two screws ❶.
3) Referring to 3-7, mount the LS chassis assembly.
4) Referring to 3-2, mount the protector base assembly.
5) Referring to 3-1, mount the Retainer, Gooseneck assembly.
6) Referring to 1-1, mount the cassette compartment assembly.

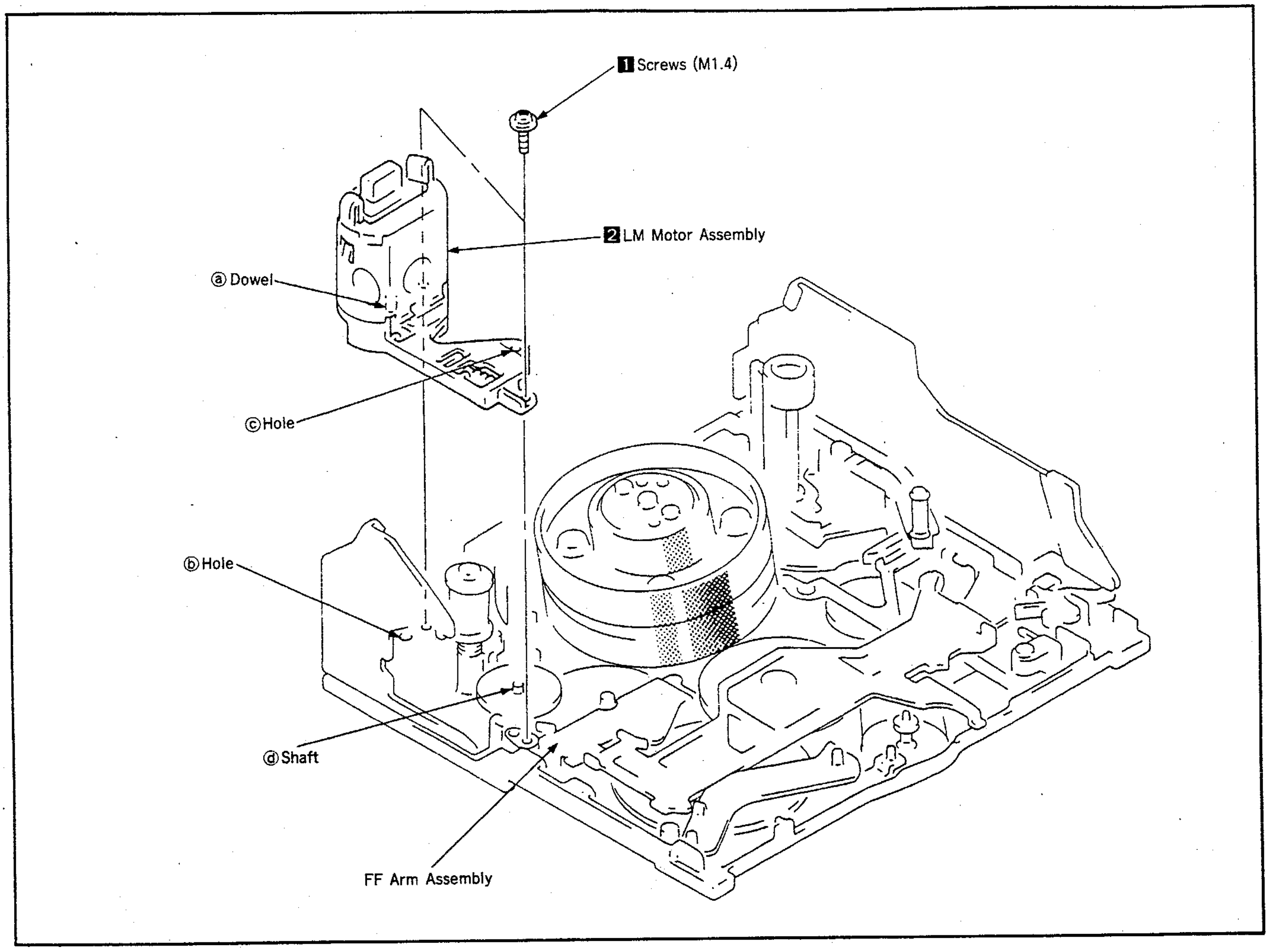


Fig. 21

3-14. LS ARM (Fig. 22)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
3) Referring to 3-2, remove the proctector base assembly.
4) Referring to 3-7, remove the LS chassis assembly.
5) Remove the LS arm ❶ from the shaft of mechanical chassis.

Note : Take care not to drop the LS roller ❷.

2. Mounting

1) Mount the LS arm ❶ meeting with mechanical chassis shaft and cam groove.

Note : Move the LS arm ❶ in arrow direction to confirm that the LS roller ❷ is surely inserted.

2) Referring to 3-7, mount the LS chassis assembly.
3) Referring to 3-2, mount the protector base assembly.
4) Referring to 3-1, mount the Retainer, Gooseneck assembly.
5) Referring to 1-1, mount the cassette compartment assembly.

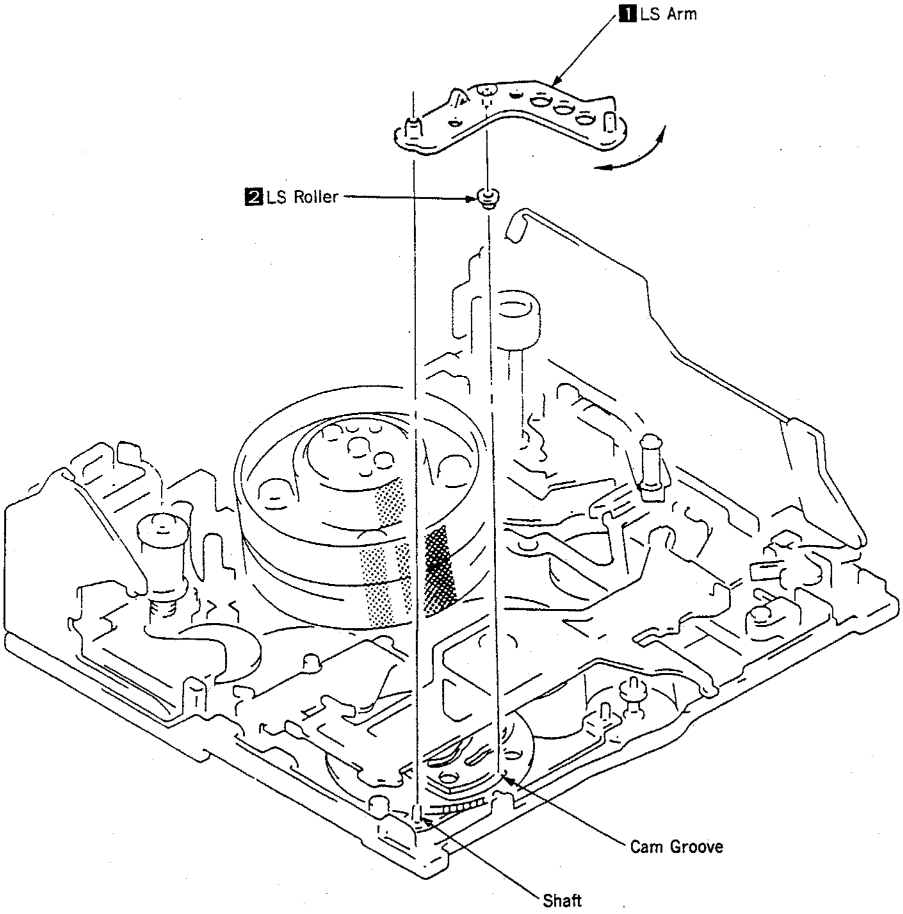


Fig. 22

3-15. M SLIDER ASSEMBLY (Fig. 23)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
3) Referring to 3-2, remove the protector base assembly.
4) Referring to 3-7, remove the LS chassis assembly.
5) Remove two screws ❶, then the gear holder ❷.
6) Remove two lock washers ❸, then the M slider assembly ❹.

2. Mounting

1) Mount the M slider assembly ❹, aligning long holes ⓐ and ⓑ of M slider assembly with shafts ⓒ and ⓓ of mechanical chassis, and a long hole ⓔ with shaft ⓕ of press arm assembly, and also shaft ⓖ with outer groove ⓗ of cam respectively.
2) Mount two lock washers ❸.
3) Mount the gear holder ❷ with its outserts ⓘ and ⓙ inserted into holes in the mechanical chassis.
4) Tighten two screws ❶.
5) Referring to 3-7, mount the LS chassis assembly.
6) Referring to 3-2, mount the protector base assembly.
7) Referring to 3-1, mount the Retainer, Gooseneck assembly.
8) Referring to 1-1, mount the cassette compartment assembly.

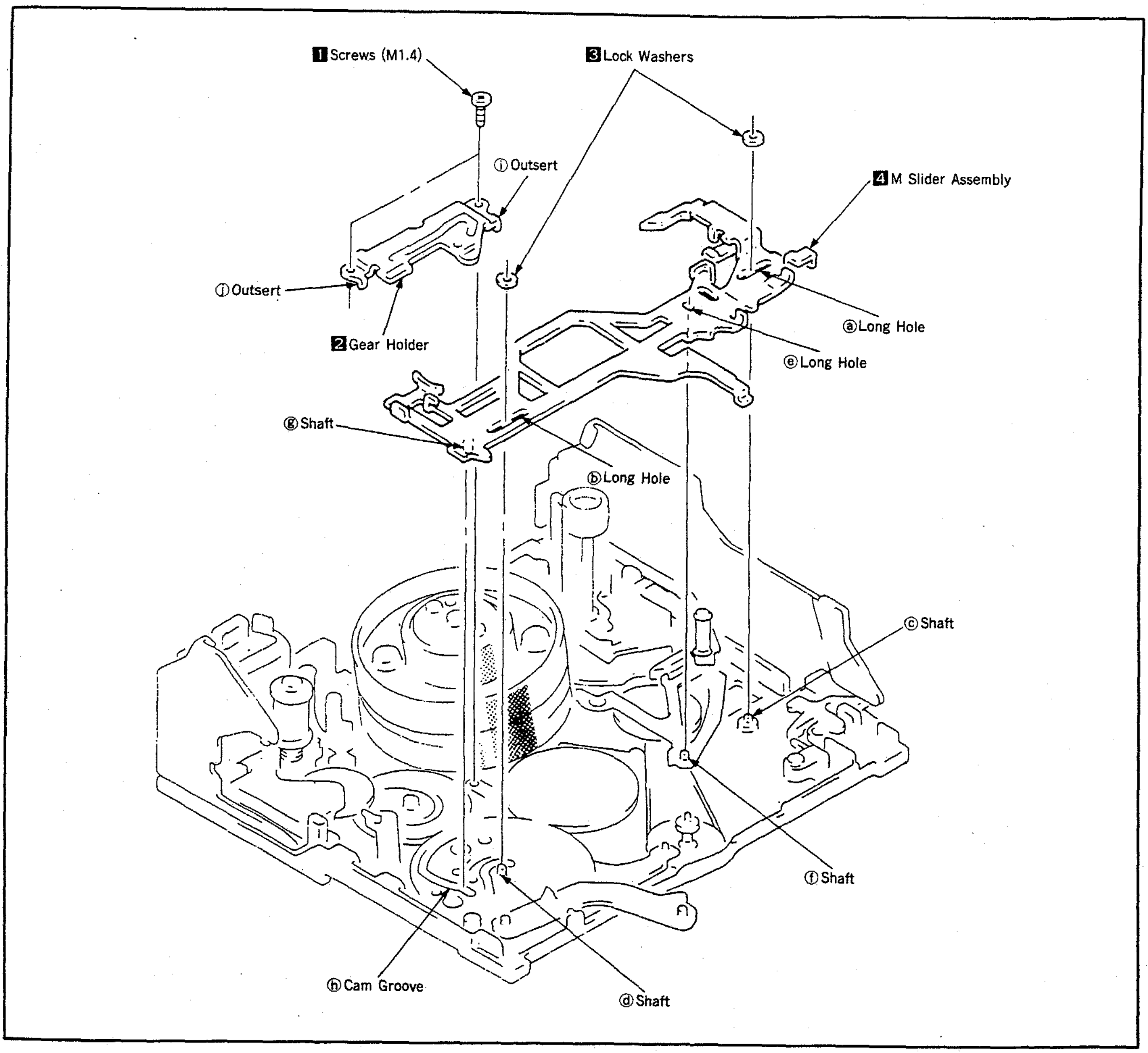

❶ Screws (M1.4)
❸ Lock Washers
ⓘ Outsert
❹ M Slider Assembly
ⓙ Outsert
❷ Gear Holder
ⓐ Long Hole
ⓔ Long Hole
ⓖ Shaft
ⓑ Long Hole
ⓒ Shaft
ⓕ Shaft
ⓗ Cam Groove
ⓓ Shaft

Fig. 23

3-16. PINCH PRESS ARM ASSEMBLY (Fig. 24)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
3) Referring to 3-2, remove the protector base assembly.
4) Referring to 3-3, remove the drum assembly.
5) Referring to 3-7, remove the LS chassis assemvly.
6) Referring to 3-15, remove the M slider assembly.
7) Remove a lock washer **1**, then pinch press arm assembly **2**.

2.Mounting

1) Mount the pinch press arm assembly **2**, inserting its sha ⓐ into the cam groove ⓑ of HC drive arm, and hole ⓒ int the shaft ⓓ of mechanical chassis.
2) Mount the lock washer **1**.
3) After mounting, shift the pinch press arm assembly towar the arrow direction.
4) Referring to 3-15, mount the M slider assembly.
5) Referring to 3-7, mount the LS chassis assembly.
6) Referring to 3-3, mount the drum assembly.
7) Referring to 3-2, mount the protector base assembly.
8) Referring to 3-1, mount the Retainer, Gooseneck assembly.
9) Referring to 1-1, mount the cassette compartment assembly.

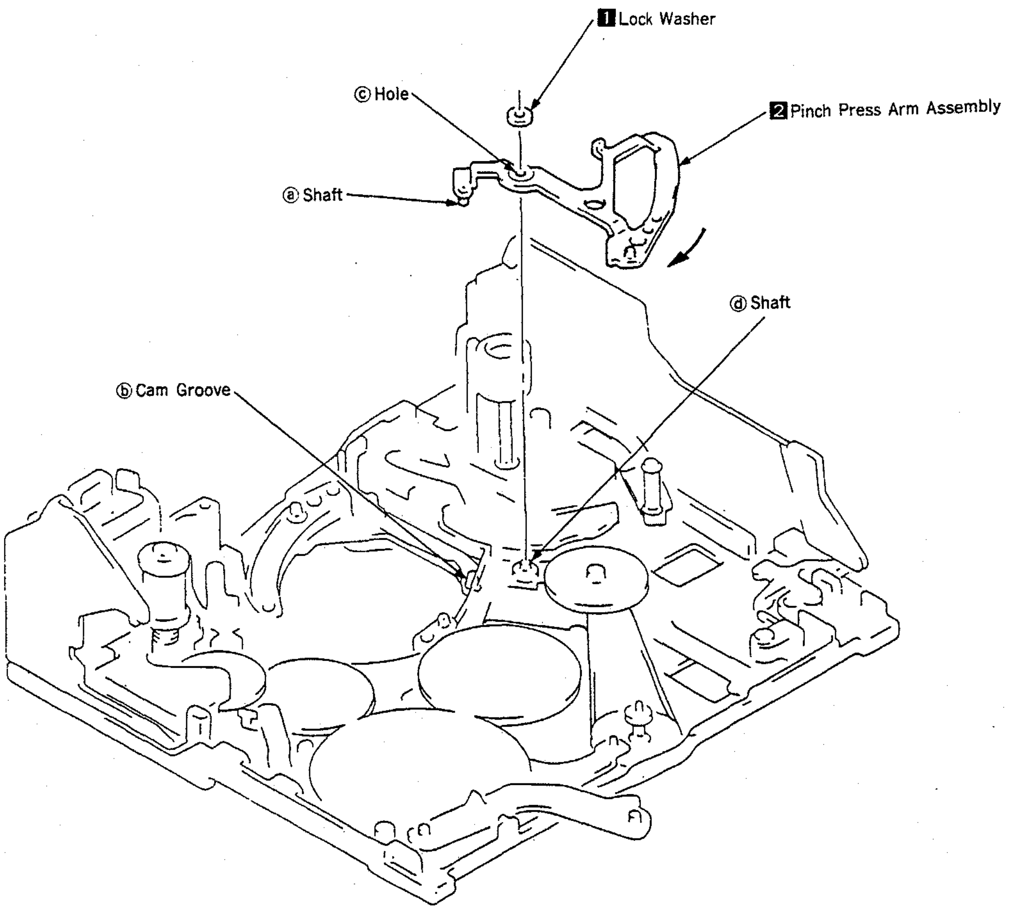


Fig. 24

3-17. CAM (Fig. 25)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
3) Referring to 3-2, remove the protector base assembly.
4) Referring to 3-7, remove the LS chassis assembly.
5) Referring to 3-14, remove the LS arm assembly.
6) Referring to 3-15, remove the M slider assembly.
7) Remove the cam ❶.

2. Mounting

1) Referring to 3-13, remove the LM motor assembly.

Note : Take care not to allow grease of LM motor assembly to stick to the TG-2 roller assembly.

2) Mount the cam ❶, aligning its center hole with shaft of mechanical chassis, and the cam groove with the shaft of GL arm assembly. At this time , make sure that the ▲ mark on L gear B is aligned with that on the cam and also a recess is aligned with the phase aligning hole respectively as shown in Fig. a.

Note : Apply grease to the cam groove if it scarecely remains.

3) Mount the LM motor assembly.
4) Referring to 3-15, mount the M slider assembly.
5) Referring to 3-14, mount the LS arm assembly.
6) Referring to 3-7, mount the LS chassis assembly.
7) Referring to 3-2, mount the protector base assembly.
8) Referring to 3-1, mount the Retainer, Gooseneck assembly.
9) Referring to 1-1, mount the cassette compartment assembly.

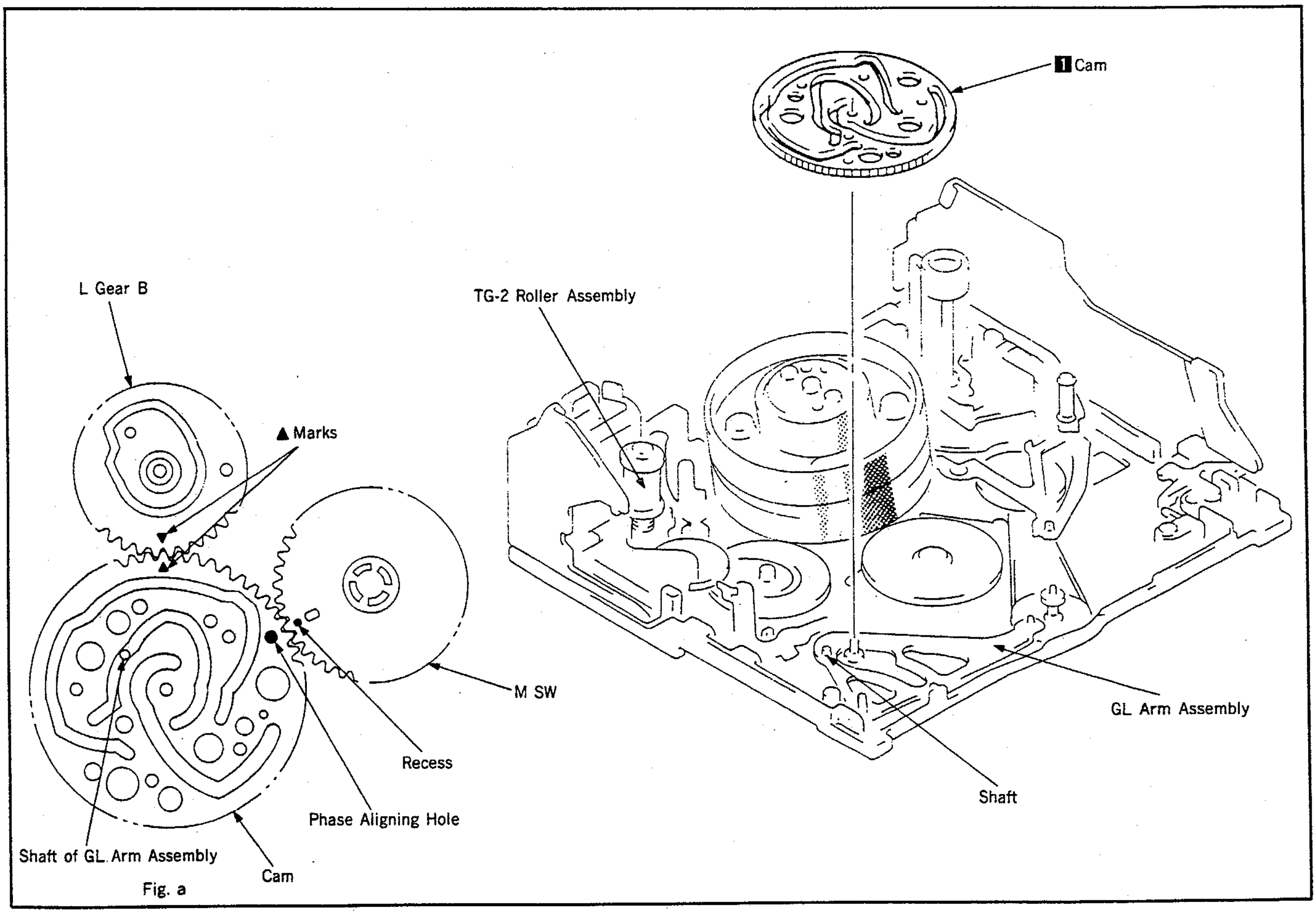


Fig. a

Fig. 25

3-18. GL ARM ASSEMBLY (Fig. 26)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
3) Referring to 3-2, remove the protector base assembly.
4) Referring to 3-7, remove the LS chassis assembly.
5) Referring to 3-14, remove the LS arm assembly.
6) Referring to 3-15, remove the M slider assembly.
7) Referring to 3-17, remove the cam.
8) Remove the GL arm assembly **1**.

2. Mounting

1) Mount the GL arm assembly **1** with its hole ⓐ inserted intc the shaft ⓑ of mechanical chassis.
2) Referring to 3-17, mount the cam.
3) Referring to 3-15, mount the M slider assembly.
4) Referring to 3-14, mount the LS arm assembly.
5) Referring to 3-7, mount the LS chassis assembly.
6) Referring to 3-2, mount the protector base assembly.
7) Referring to 3-1, mount the Retainer, Gooseneck assembly.
8) Referring to 1-1, mount the cassette compartment assembly.

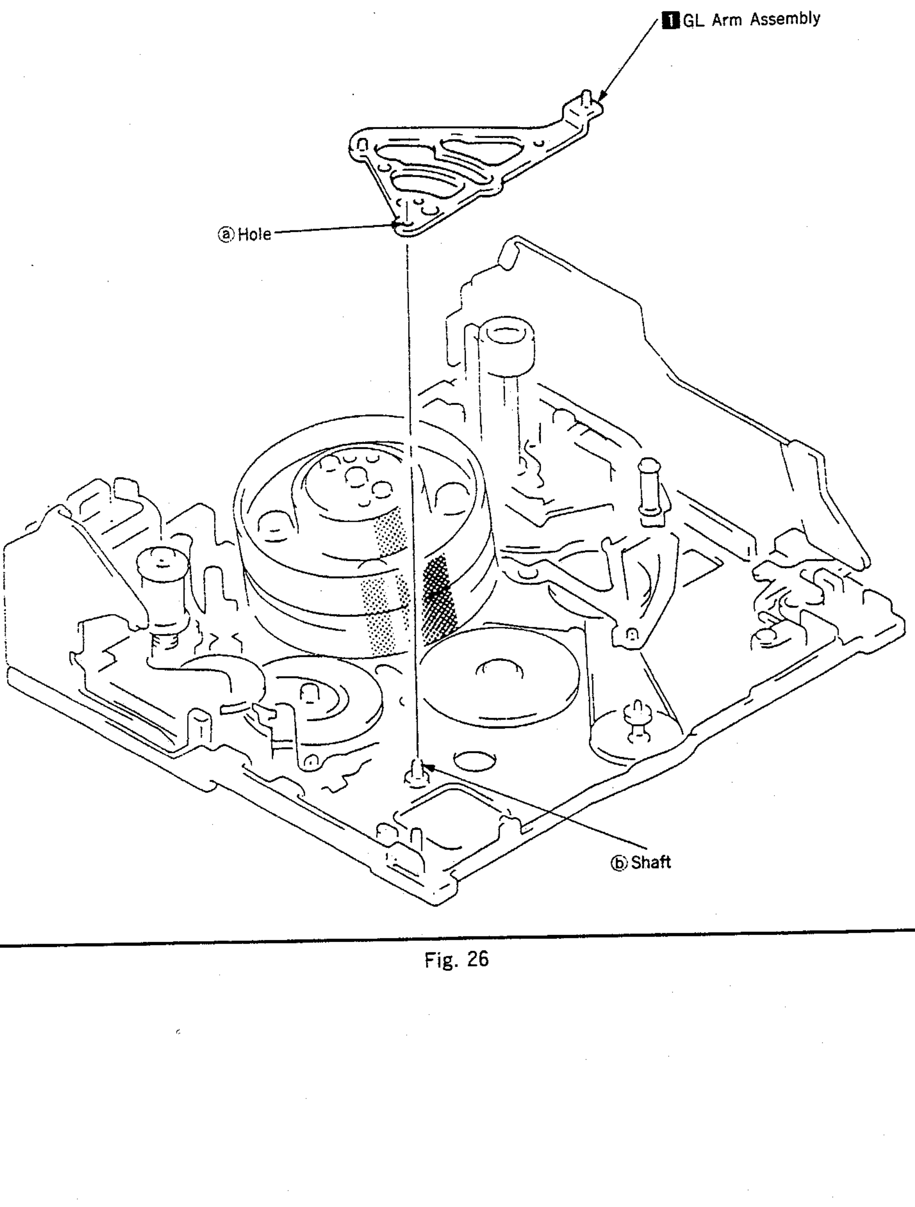


Fig. 26

3-19. L GEAR A AND L GEAR B (Fig. 27)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
3) Referring to 3-2, remove the protector base assembly.
4) Referring to 3-7, remove the LS chassis assembly.
5) Referring to 3-14, remove the LS arm assembly.
6) Referring to 3-15, remove the M slider assembly.
7) Referring to 3-17, remove the cam.
8) Referring to 3-13, remove the LM motor assembly.
9) Remove the FF arm assembly ❶.
10) Remove the L gear A ❷.
11) Remove the L gear B ❸.

2. Mounting

1) Insert the L gear B ❸ into the shaft of mechanical chassis. (At this time, the phase aligning mark ▲ should be faced toward the cam mounting shaft ⓐ.)
2) Insert the L gear A ❷ into the shaft of mechanical chassis.
3) Mount the FF arm assembly ❶ with its two shafts inserted into the cam groove of L gear B ❸ and the hole of mechanical chassis.
4) Referring to 3-17, mount the cam.
5) Referring to 3-13, mount the LM motor assembly.
6) Referring to 3-15, mount the M sleder assembly.
7) Referring to 3-14, mount the LS arm assembly.
8) Referring to 3-7, mount the LS chassis assembly.
9) Referring to 3-2, mount the protector base assembly.
10) Referring to 3-1, mount the Retainer, Gooseneck assembly.
11) Referring to 1-1, mount the cassette compartment assembly.

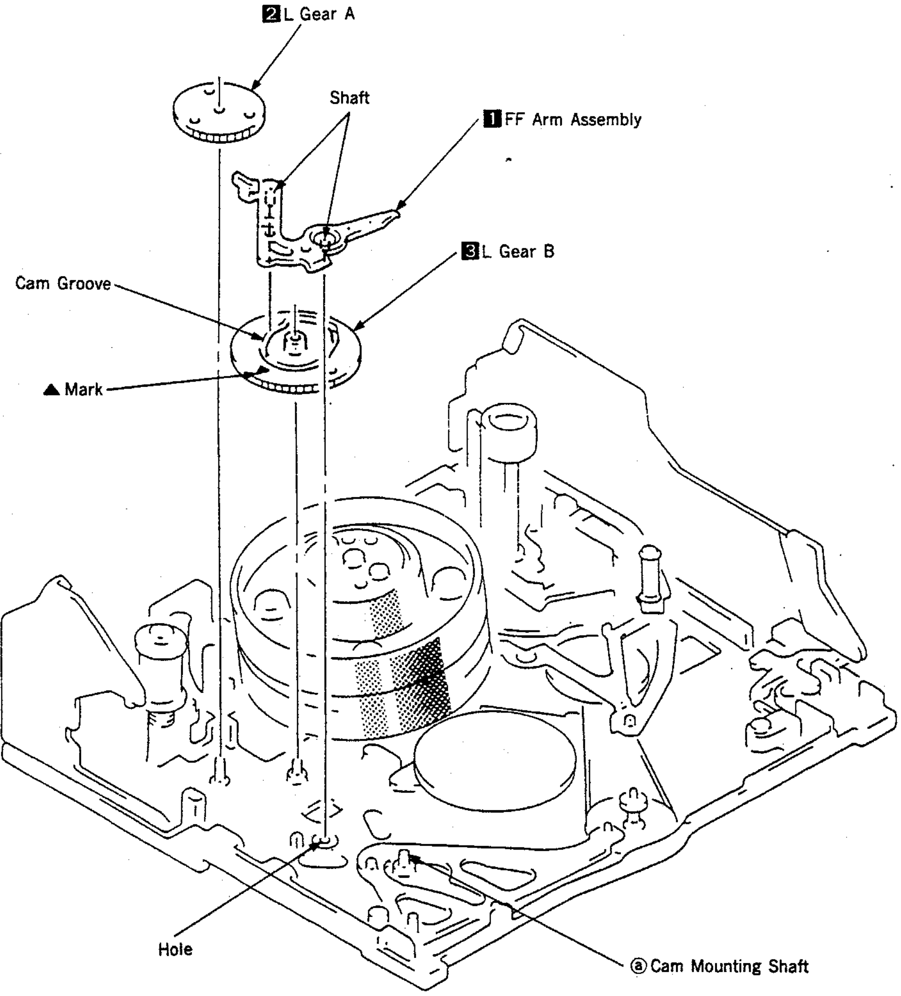


Fig. 27

3-20. RELAY PULLEY AND CHANGE GEAR ASSEMBLY (Fig. 28)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
3) Referring to 3-2, remove the protector base assembly.
4) Referring to 3-3, remove the drum assembly.
5) Referring to 3-7, remove the LS chassis assembly.
6) Referring to 3-14, remove the LS arm assembly.
7) Referring to 3-15, remove the M slider assembly.
8) Referring to 3-17, remove the cam.
9) Referring to 3-18, remove the GL arm assembly.
10) Referring to 3-16, remove the pinch press arm assembly.
11) Remove a lock washer ❶, then remove together the Change gear assembly ❷, relay belt ❸ and relay pulley ❹.

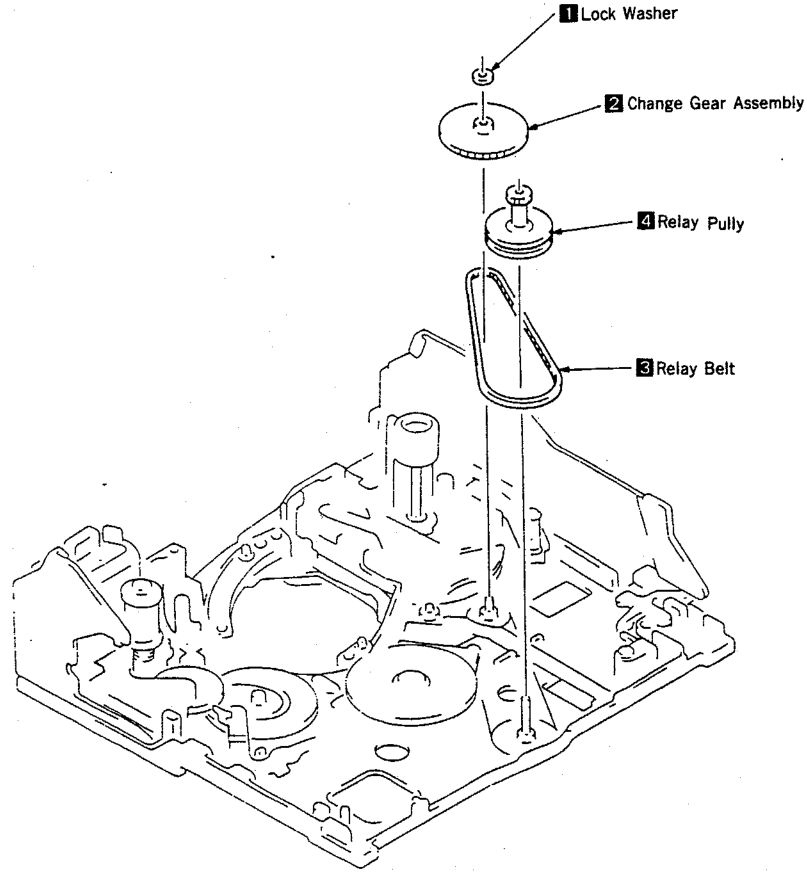
2. Mounting

*Give one or two drips of oil to the conversion gear shaft an relay pulley shaft respectively. (Oiling range is under th neck as shown in Fig. a.)

1) Hooking the relay belt ❸ to the relay pulley ❹ and Chang gear assembly ❷, mount respective parts.
   * At first, insert the relay pulley into the mechanical chassis shaft, then the change gear assembly by engaging with th capstan motor gear.

Note : Take care not to damage the Change gear by th capstan motor gear.

2) Mount a lock washer ❶.
3) Referring to 3-16, mount the pinch press arm assembly.
4) Referring to 3-18, mount the GL arm asembly.
5) Referring to 3-17, mount the cam.
6) Referring to 3-15, mount the M slider assembly.
7) Referring to 3-14, mount the LS arm assembly.
8) Referring to 3-7, mount the LS chassis assembly.
9) Referring to 3-3, mount the drum assembly.
10) Referring to 3-2, mount the protector base assembly.
11) Referring to 3-1, mount the Retainer, Gooseneck assembly
12) Referring to 1-1, mount the cassette compartment assembly



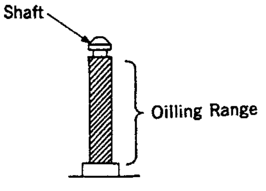


Fig. a

Fig. 28

3-21. ROTARY UPPER DRUM REPLACEMENT

1. Removoal

- If possible, make a recording before removal.

1) Remove the two screws [1] (Fig. 29).
2) Mount the jig [2] (Ref. No. J-10) with the two supplied screws [3], then screw the attached hexagon socket screws [4] to the jig [2]. The rotary upper drum [5] will move upward and come off (Fig. 30).

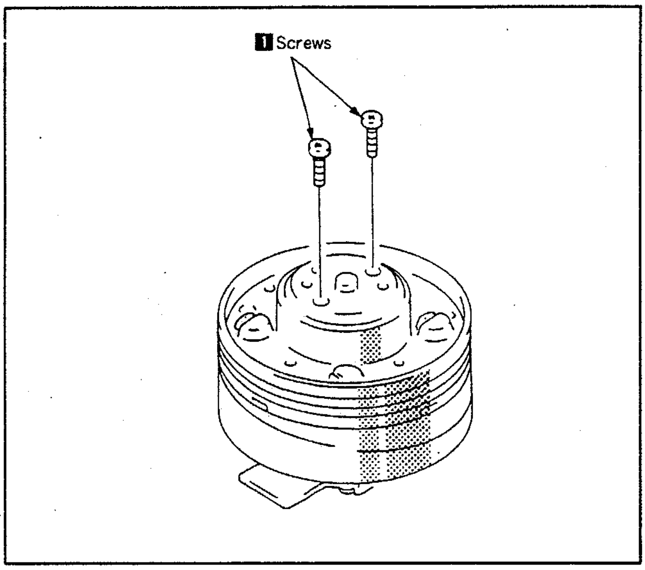


Fig. 29

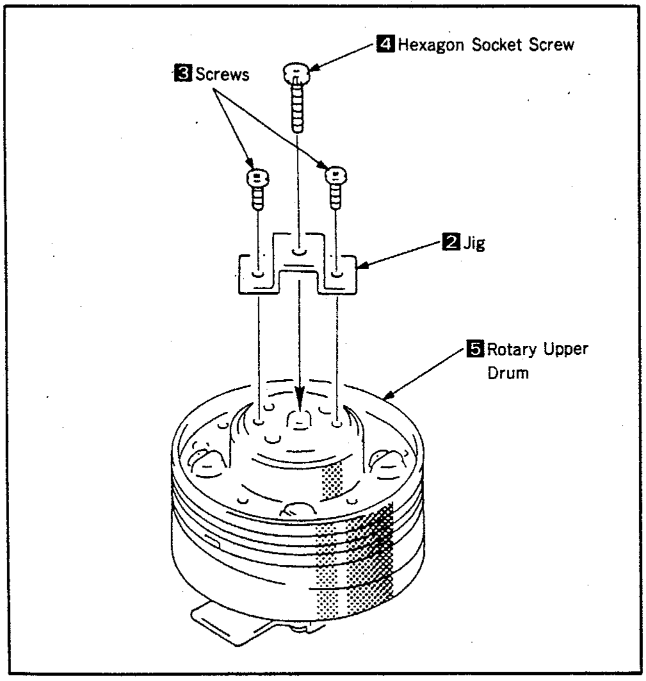


Fig. 30

2. Installation

1) Wipe clean the flange surface and the rotary upper drum [5] surface that makes contact with it, and confirm that they are free from dirt and scratches.
2) Insert the jig [6] (Ref. No. J-10) into the drum positioining hole, then set then set the rotary upper drum [5] by passing the jig through its positioning hole [7]. (Fig.31)
3) Remove the jig [6] and push down the rotary upper drum [5] gently by hand. If it does not go all the way down, secure it temporarily by tightening the two screws [1] alternately (Fig.29).
4) Insert the jig [6] into the positioning hole [7] again and confirm that it goes in smoothly. If it does not, loosen the two screws [1], repeat step 2) of the Removal paragraph and restart the setting procedure.
5) Tighten the screws [1].

Note : After installing, be sure to perform tape path adjustment as described in section 4.

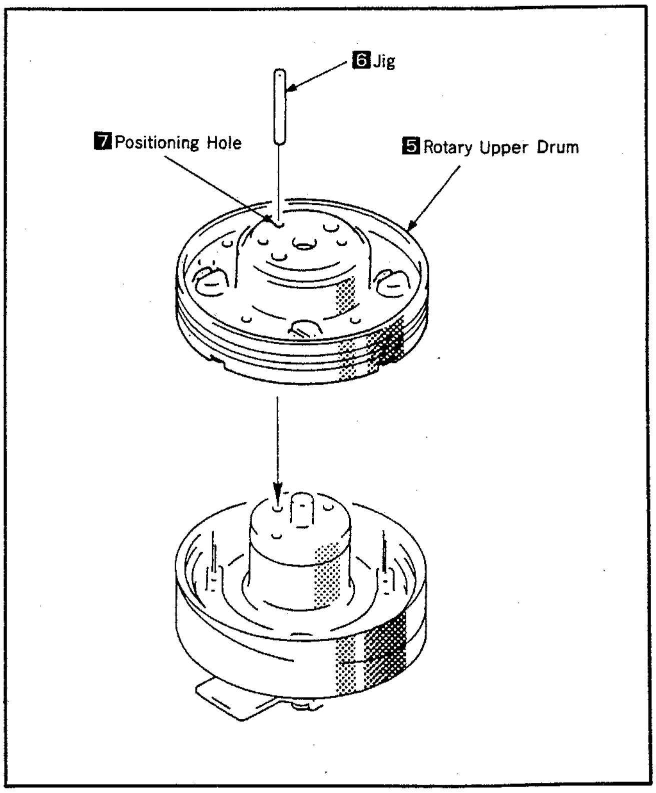


Fig. 31

3-22. ADJUSTMENT OF TENSION REGULATOR POSITION (Fig. 32)

1. Adjustment

1) Set a cassett tape and run the tape in the PB mode.
2) With the tape running, check that the distance from No.1 guide to No. 2 guide upper flange is 4.2 mm.
3) If they are not at the specified positions, perform adjustment in step 4) and subsequent steps.
4) Loosen the screw ❶.
5) If No.1 guide is located inside the specified position, shift the string block toward the arrow Ⓐ using the FWD B.T. adjusting driver (Ref No. J-15). Or, if it is located outside, shift toward the arrow Ⓑ.
6) Tighten the screw ❶.

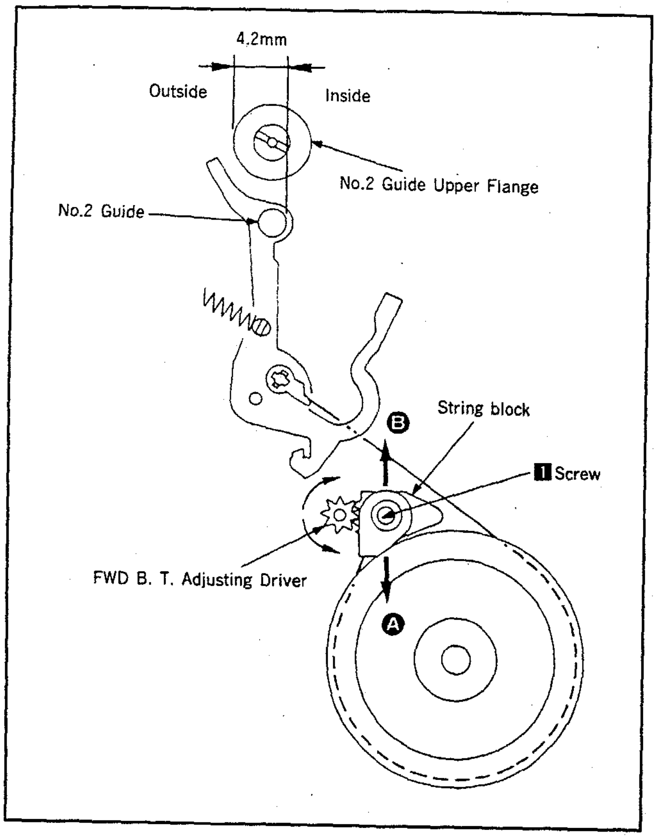

4.2mm
Outside
Inside
No.2 Guide Upper Flange
No.2 Guide
String block
Ⓑ
❶ Screw
FWD B. T. Adjusting Driver
Ⓐ

Fig. 32

3-23. FWD BACK TENSION ADJUSTMENT (Fig.33)

1) Select the TEST mode 1 using the adjusting remote controller (Ref No. J-17).
2) Set the torque cassette (Ref No.J-10).
3) Select the FWD mode, and check that the torque of S reel table is 8.5 ~ 11.5 g · cm.
If it is out of standard, adjust the TG-1 spring hook position using the FWD B.T. adjusting driver (Ref No. J-15).

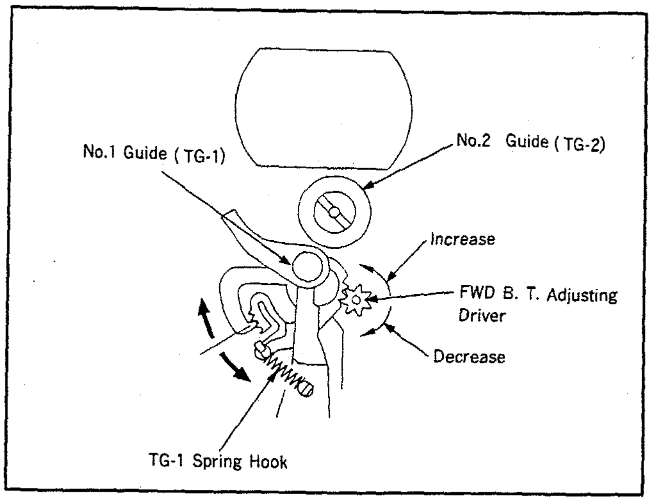

No.1 Guide (TG-1)
No.2 Guide (TG-2)
Increase
FWD B. T. Adjusting Driver
Decrease
TG-1 Spring Hook

Fig. 33

3-24. REEL TORQUE CHECK

1) Set the torque cassette.
2) Select the FWD mode, and check that the torque fluctuatio center of T reel table is 7 ~ 17 g · cm
3) Select the REV mode, and check that the torque fluctuatio center of S reel table is 25 ~ 39 g · cm.
4) Select the REV mode, and check that the torque of T ree table is 7 ~ 17 g · cm.
5) If the above data is not satisfied, the tension regulator band, T hard tab or T soft assembly will be faulty. Check them first, and if no abnormality is found, replace respective reel tables.

4. TAPE PATH ADJUSTMENT

The 8mm video system uses ATF (Automatic Track Finding) which instantaneously controls a tape running speed based on 4 types of pilot signals and performs high-precision tracking.
This does away a tracking control knob and allows accurate track tracing.
On the other hand, however, the ATF system has a problem in adjusting the tape path system. That is, if head tracing is out of order a little, the ATF automatically corrects it, which means that perfect adjustment cannot be done.
Therefore, in the A mechanism, the ATF system is forcibly operated to shift a tracking amount constantly (approx. 1/4) by setting the PATH mode with the adjusting remote controller (Ref No.J-16). So, fine tracking adjustment can be easily done. Also, the PATH mode setting varies with the model, and therefore, refer to the Service Manual.

Example) For CCD-FX410 series
Set the adjusting remote controller to the HOLD ON side.

1) Set PAGE : 1, ADDRESS : 00, DATA : 01 to cancel the PROTECT mode.
2) Set PAGE : D, ADDRESS : 01, DATA : 03 to select the PATH mode.

Note : Setting of PATH mode = TRACK SHIFT mode
If the adjusting remote controller (Ref No.J-16) is set to HOLD OFF once, then set to HOLD ON again after mode setting, the display of ADDRESS and DATA changes.

3) After adjustment is over, set DATA : 00, and press the PAUSE buttom on the adjusting remote controller (Ref No. J-16).

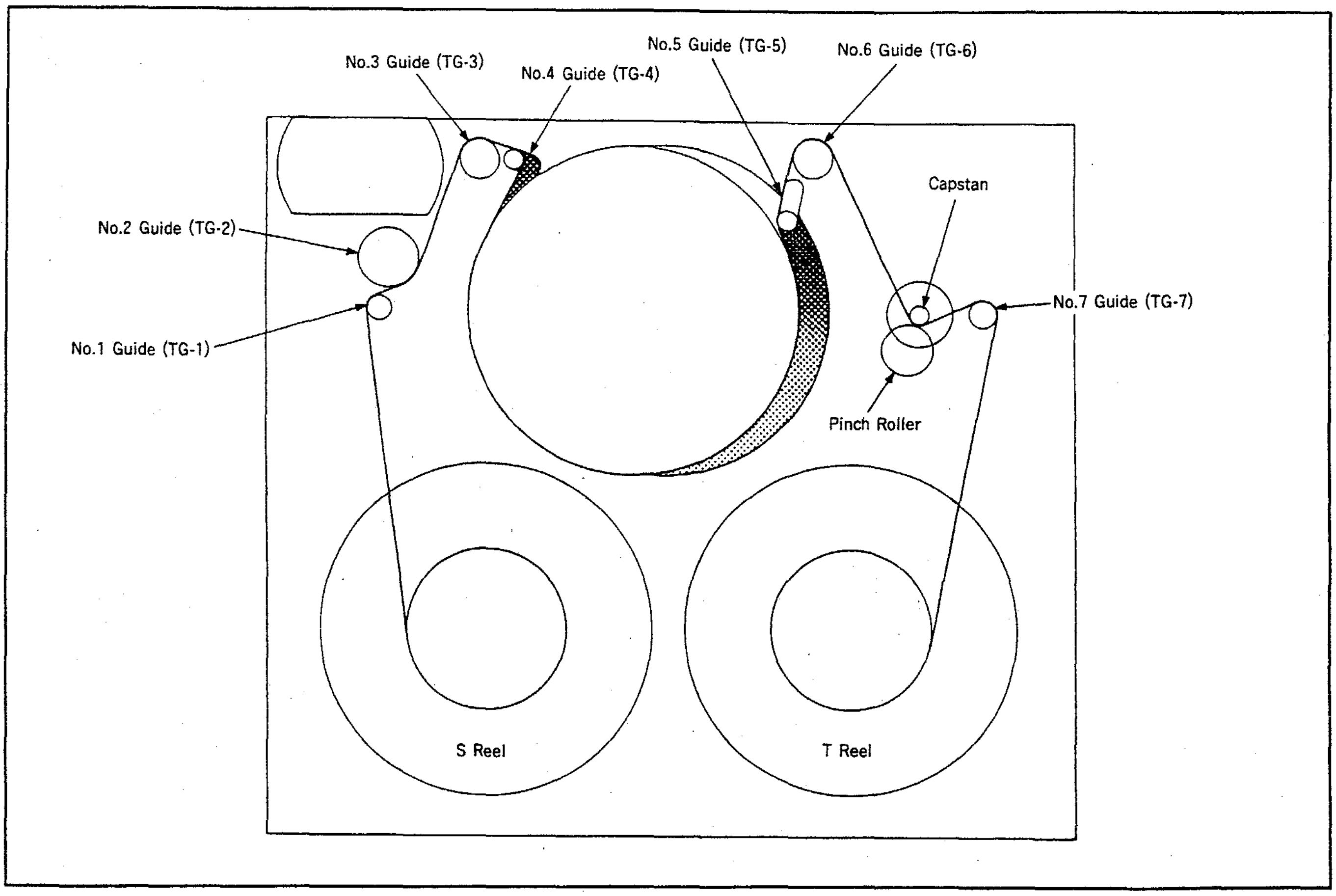


Fig. 34-A

[Note on Adjustment of No.7 Guide (TG-7)]

The height adjustment screw for No.7 guide (TG-7) is located at some distance from the guide (refer to Fig.41).

Therefore, when performing section 4-4. No.7 Guide (TG-7) Adjustment it is convenient to use the alignment tape for tracking (Ref. No. J-6), modified as follows, and perform adjustment in playback mode.

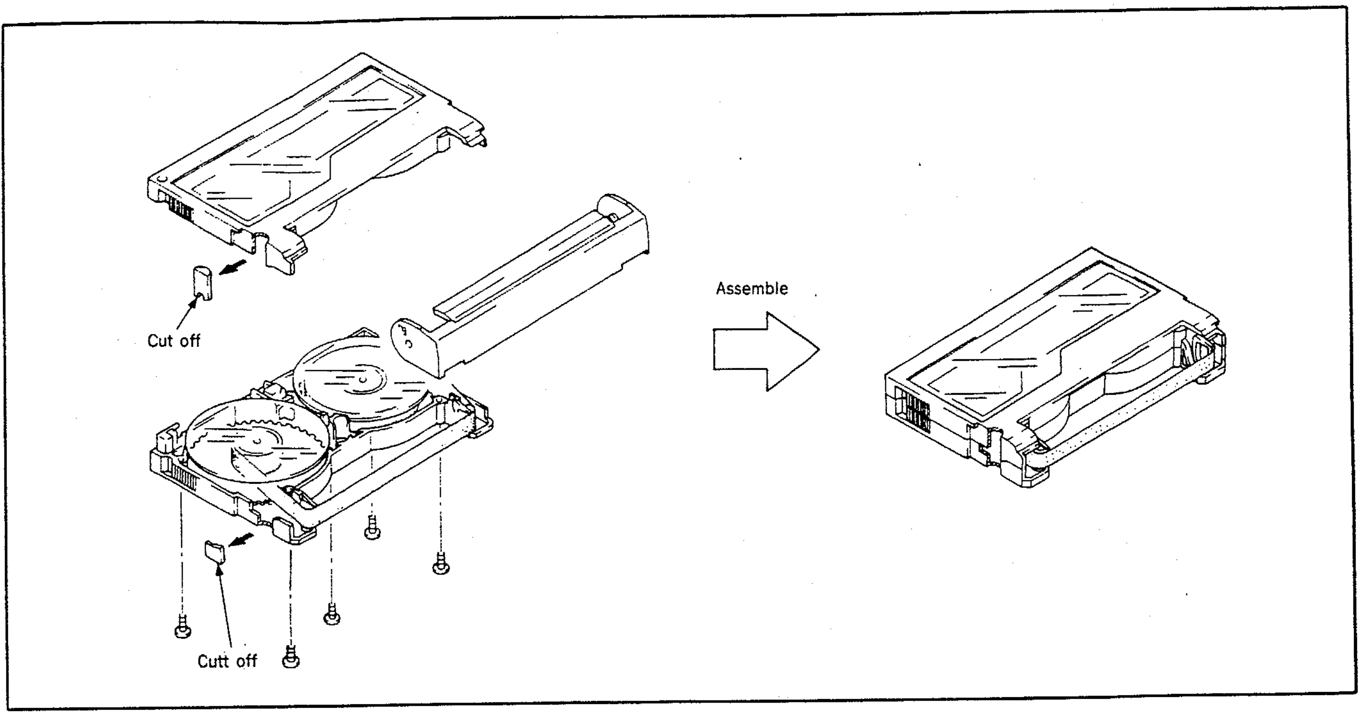


Fig. 34-B

4-1. PREPARATION FOR ADJUSTMENT

1) Clean the tape running surface (tape guides, drum, capstan shaft, pinch roller) (Fig. 34-A).
2) Set the PATH mode using the adjusting remote controller.
3) connect an oscilloscope to the check pin connector of the set.
   Example) For CCD-FX410 series
   CH1 : CN001 pin ③ (PB RF OUT) on CS-31 board
   CH2 : CN001 pin ④ (RF SWP) on CS-31 board
4) Play back a tracking alignment tape (NTSC : WR5-1N, or PAL : WR5-1C).
5) Check that a RF waveform is flat at the inlet and outlet of the oscilloscope (Fig. 35 ⓐ).
   If not flat, make adjustment with the procedures below.
   When the RF waveform is not flat at the inlet/outlet ; See Fig. 35 ⓑ and ⓒ.

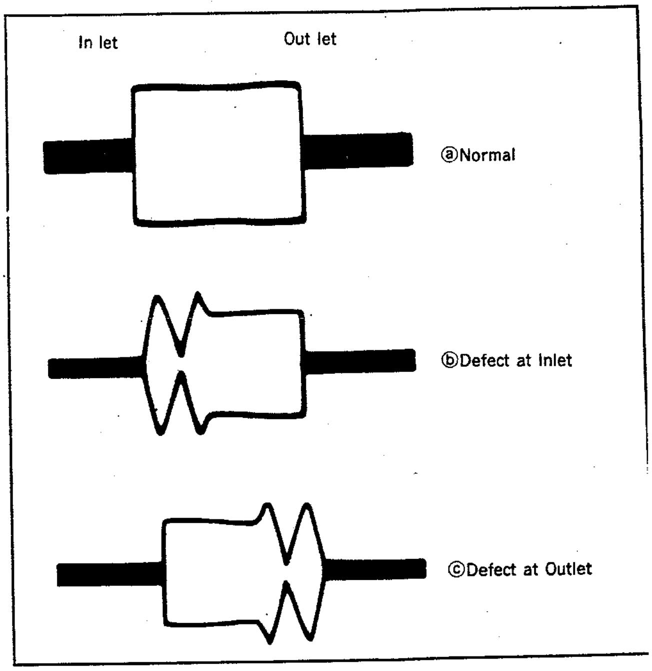


Fig. 35

4-2. TRACKING ADJUSTMENT (Fig. 36, 37)

1) Play back the tracking alignment tape.
2) Loosen the No.3 guide (TG-3) lock screw ❶ and turn the No.3 guide to flatten the waveform at the inlet.
3) Tighten the No.3 guide (TG-3) lock screw ❶ to lock the No.3 guide.
4) Loosen the No.6 guide (TG-6) lock screw ❷ and turn the No.6 guide to flatten the waveform at the outlet.
5) Tighten the No.6 guide (TG-6) lock screw ❷ to lock the No.6 guide. When this is done, make sure that the waveform does not change at the outlet.

Note : Be careful not to loosen the lock screw too much because the guide is easily moved.
: Take care not to allow interference between No.6 guide and drum when tightening the No.6 guide lock screw.

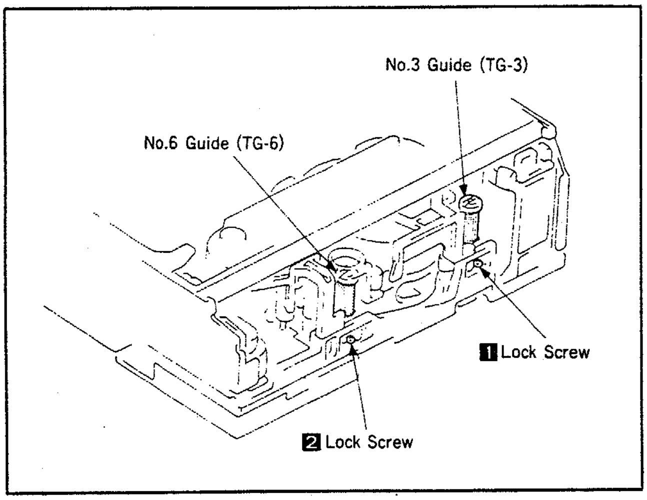


Fig. 36

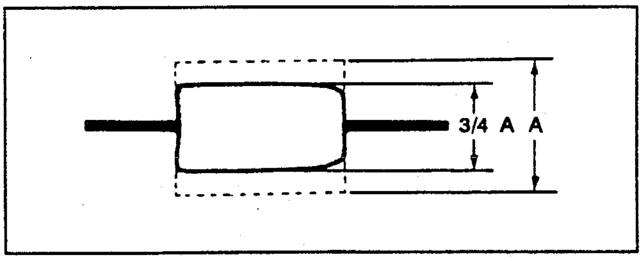


Fig. 37

4-3. No.2 GUIDE (TG-2) ADJUSTMENT

When the No.2 guide has been turned or replaced, perform height presetting before this adjustment.

4-3-1. No. 2 GUIDE (TG-2) HEIGHT PRESETTING (Fig. 38)

1) Rotating the TG-2 upper flange, adjust the height of bottom face of TG-2 lower flange from the top face of dowel on the mechanical chassis to 3.3 ± 0.05 mm.

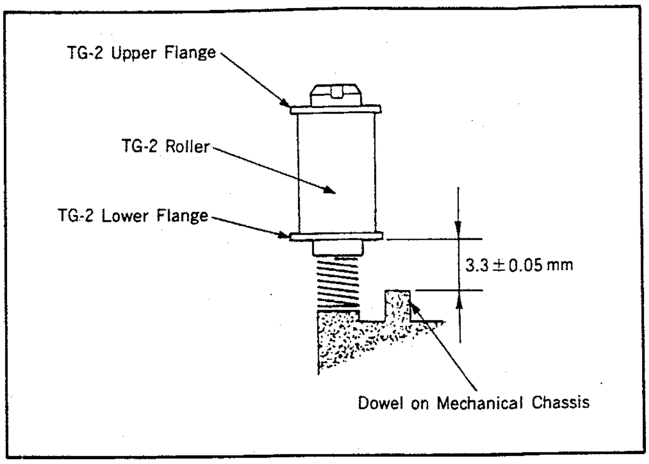


Fig. 38

[Reference]
This A mechanism is equipped with four adjustable guides (TG-2, 3, 6 and 7). To raise or lower the respective guide rotate the corresponding adjustment screw as shown below.

Guide	Guide adjustment	Rotating direction of adjustment screw
TG-2, 3, 6	Raise	Counterclockwise
	Lower	Clockwise
TG-7	Raise	Clockwise
	Lower	Counterclockwise

4-3-2. No. 2 GUIDE (TG-2) ADJUSTMENT (Fig. 39, 40)

1) Play back a thin tape like the P6-120MP, etc. and set the REV mode.
2) Confirm that the tape is not bent at the lower flange 2 of the No.2 guide (TG-2) 1 (Fig. 39). If it is, turn the upper flange 3 of the No.2 guide (TG-2) clockwise with a screwdriver, lowering it until the tape is straightened.
3) Play back the alignment tape for tracking adjustment.
4) Perform tracking adjustment and trcking fine adjustment as described in sections 4-2.
5) In the track shift mode, CUE/REV the tape, then play it back and confirm that the RF waveform rises flat within 2 seconds.
6) If the waveform is not normal (Fig. 40), turn the upper flange 3 of the No. 2 guide (TG-2) 1 90° counterclockwise and repeat step 5.
   Repeat steps 5) and 6) until a normal waveform is obtained.
   Then, confirm that the tracking waveform has not changed.
   If it has, perform fine adjustment of entrance side tracking and repeat step 5).

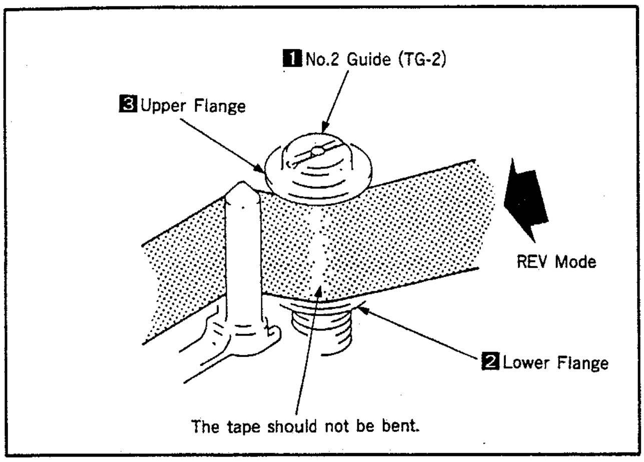


Fig. 39

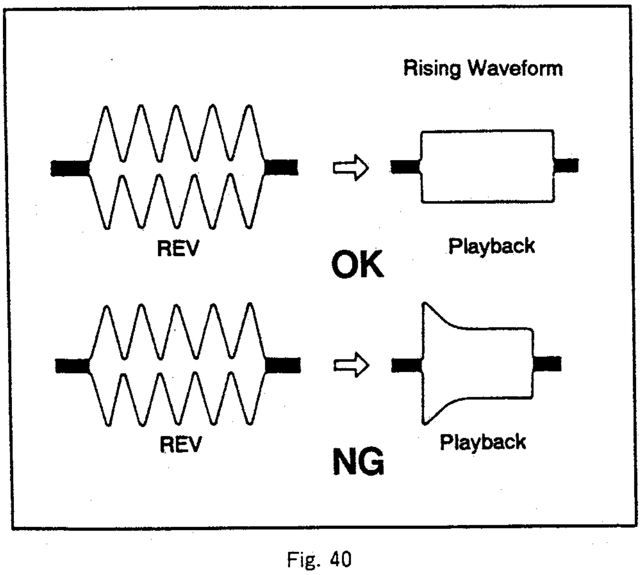


Fig. 40

4-4. No.7 GUIDE (TG-7) ADJUSTMENT (Fig. 41)

Note : This adjustment requires the No. 7 guide adjusting cassetetape (Fig. 34-B).

1) Play back the No.7 guide adjusting cassetetape and set the REV mode.
2) Confirm that the tape is not bent between the No.6 guide (TG-6) 1 and the capstan 2. If it is, turn the hight adjusting screw 4 of the No.7 guide (TG-7) 3 until the tape is straightened.
3) Set the playback mode again and confirm that the tape is not bent between the capstan 2 and the hight adjusting screw 4 of the No.7 guide (specification : 0.5mm or less). If the tape is bent beyond the specification, turn the No.7 guide (TG-7) 3 until bending is within the specification (0.5mm).
   If in the REV mode tape bending between the No. 6 guide (TG-6) 1 and the capstan 2 is 0.3mm or less, adjustment can be considered completed.

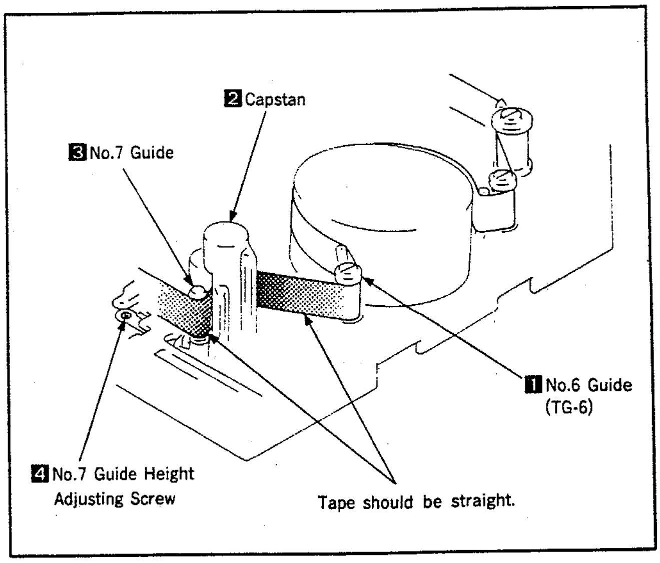


Fig. 41

4-5. CUE AND REV WAVEFORM CHECK (Fig. 42)

1) Play back the alignment tape for tracking adjustment and set the REV mode. Confirm that waveform peaks maintain a constant pitch of 5 seconds or more (Fig. 42). In case pitch is not constant, perform section 4-2.Tracking Fine Adjustment and section 4-4. No.7 Guide Adjustment.
2) Set the CUE mode. Confirm that waveform peaks still maintain a constant pitch of 5 seconds or more (Fig. 42).
   Otherwise, perform section 4-2 Tracking Fine Adjustment.

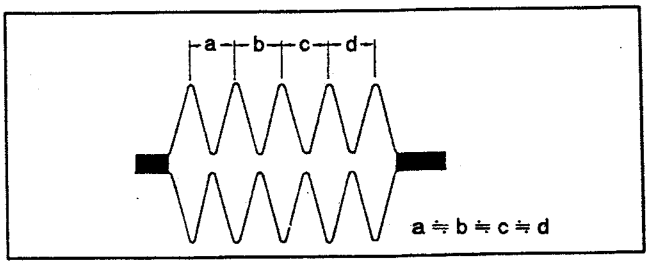


Fig. 42

4-6. CHECK AFTER ADJUSTMENT

4-6-1. TRACKING CHECK

1) Confirm that the amplitude of RF waveform is reduced to approx. 3/4 when the track shift mode is set (Fig. 43).
2) Then, confirm that the minimum amplitude value (EMIN) is 65 % of the maximum value (EMAX) or larger (Fig. 44).
3) Confirm that no large fluctuations occur on the waveform (Fig. 45).

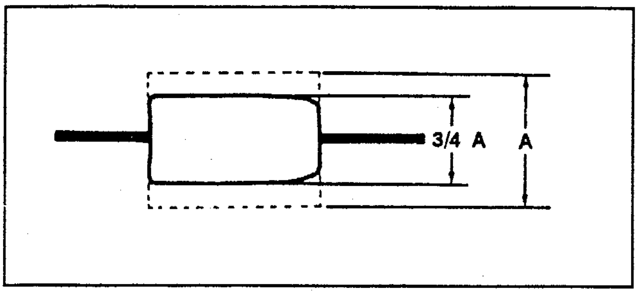


Fig. 43

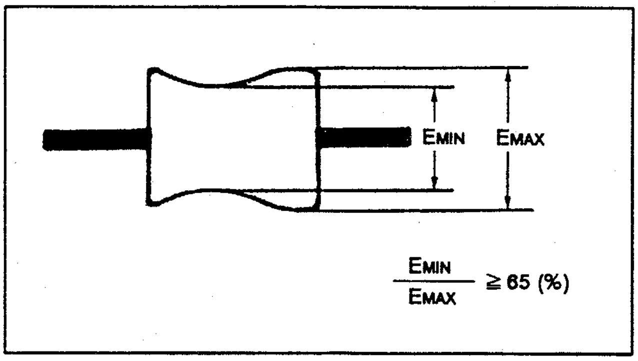

EMIN
EMAX
$\frac{E_{MIN}}{E_{MAX}} \geq 65$ (%)

Fig. 44

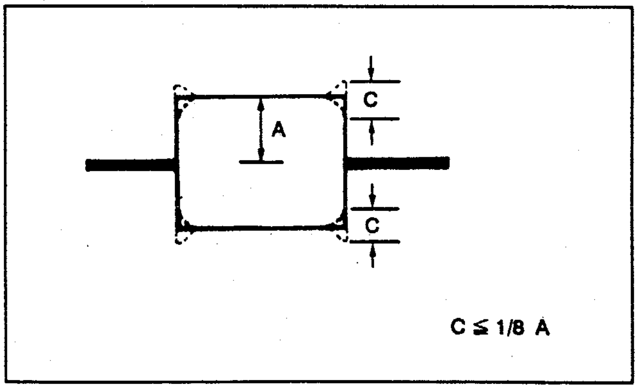


Fig. 45

4-6-2. RISING CHECK (Fig. 46)

1) Play back the alignment tape for tracking adjustment.
2) Cancel the track shift mode.
3) Eject the tape, then load it again.
4) Set the playback mode and confirm that the RF wave form rises flat within 2 seconds. Also confirm that the tape is not bent around the pinch roller.
5) CUE/REV and FF/REW the tape, then play it back and confirm that the RF waveform rises flat within 2 seconds, Also confirm that the tape is not bent around the pinch roller.
6) Repeat steps 3) to 5) once more.

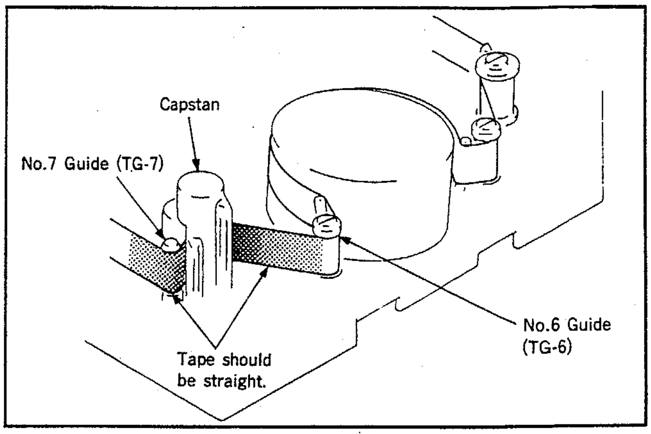

Capstan
No.7 Guide (TG-7)
No.6 Guide (TG-6)
Tape should be straight.

Fig. 46

4-6-3. TAPE PATH CHECK (Fig. 47)

1) Play back a thin tape like the P6-120MP (NTSC) or P5-90MP (PAL), etc. and confirm that no tape rising occurs, and that curling is less than 0.3mm, at the lower flange of the No. 2 guide , the upper flange of the No.3 guide, the upper flange of the No. 6 guide and the No.7 guide upper and lower flanges.
2) Confirm that no tape rising occurs and that curling is less than 0.3mm at the flange of all guide when pressing the FF button in the playback mode to set the CUE mode, or the REW button to set the REV mode.

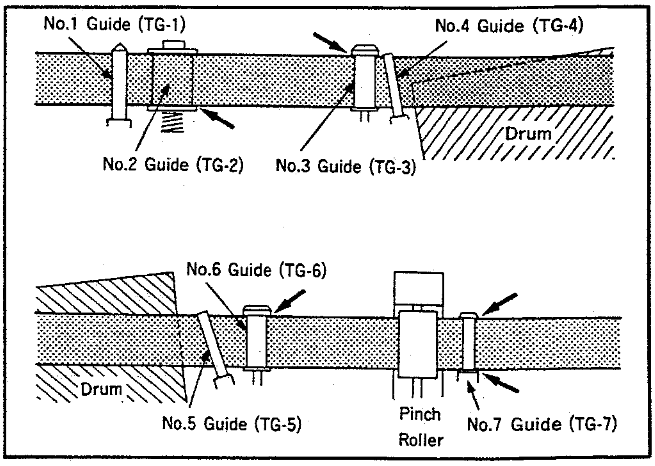

No.1 Guide (TG-1)
No.4 Guide (TG-4)
Drum
No.2 Guide (TG-2)
No.3 Guide (TG-3)
No.6 Guide (TG-6)
Drum
No.5 Guide (TG-5)
Pinch Roller
No.7 Guide (TG-7)

Fig. 47

9-973-199-11

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Personal Video Group

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GV-S50

V19548

SONY®

SERVICE MANUAL

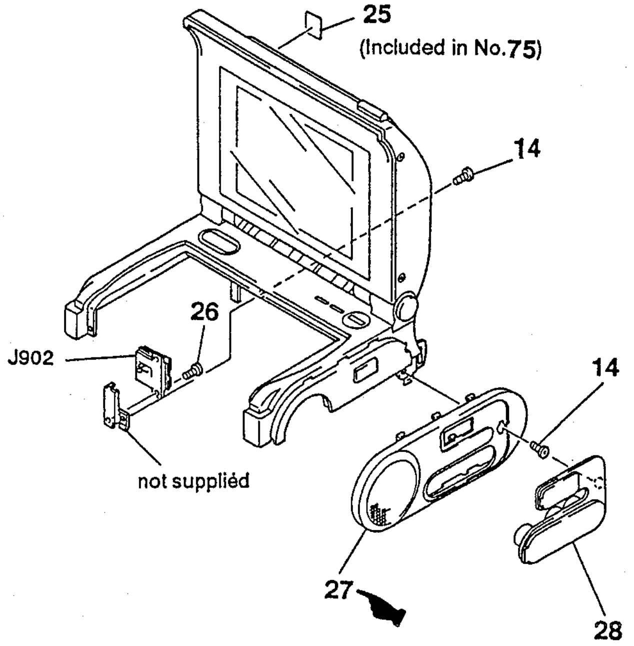
US Model
Canadian Model

CORRECTION-1

Correct your service manual as shown below.

- **Page 134 5-1. CABINET ASSEMBLY for the EXPLODED VIEWS**

☛ : Corrected portion



Incorrect			Correct		
Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
27	X-3942-022-1	CABINET (R) ASSY, SIDE	27	3-949-395-11 ☛	CABINET (R), SIDE ☛

Sony Corporation
Consumer A&V Products Company
Personal A&V Products Div.

English
94J0935-1
Printed in Japan
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Published by Personal A&V Products Div.
Quality Engineering Dept.

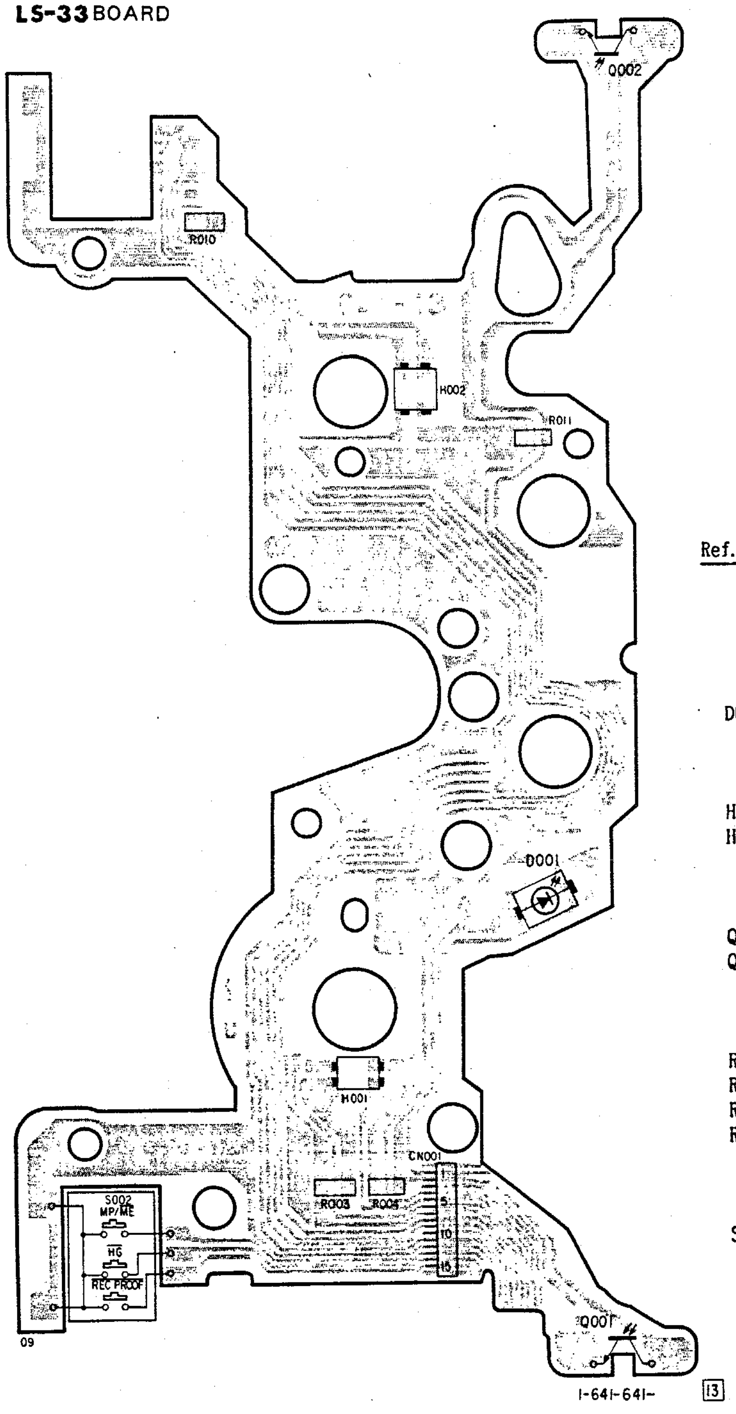
8mm Video MECHANICAL ADJUSTMENT MANUAL IV

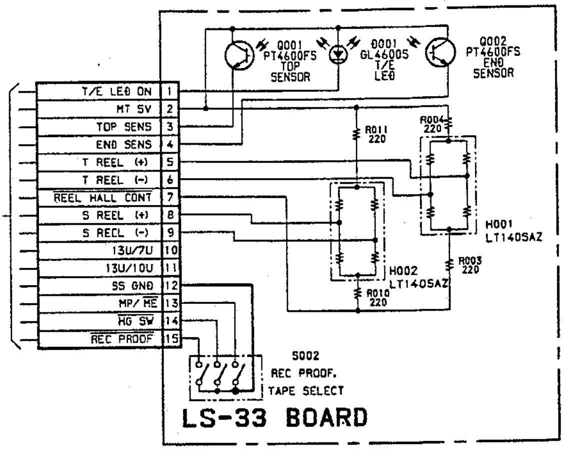
SUPPLEMENT-1

- Guide to LS-33 Board Electrical Parts of the LS Chassis Assembly
- Guide to Changes in Mechanism Parts

(Models)
CCD-FX300/FX310/FX311, CCD-FX400/FX410/FX411, CCD-FX500/FX510/FX511
CCD-FX700/FX710, CCD-FX300E, CCD-FX400E, CCD-FX500E
GV-M20, GV-S50, GV-S50E, CCD-TR31/TR303/TR303PK, CCD-TR303E/TR303EP

LS-33 BOARD

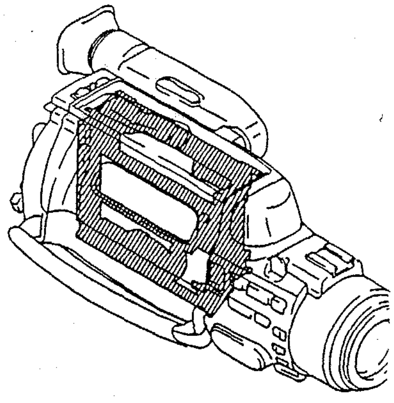

Q002
R010
H002
R011
D001
H001
CN001
R003
R004
5
10
15
S002
MP/ME
HG
REC PROOF
Q001
09
1-641-641-
13

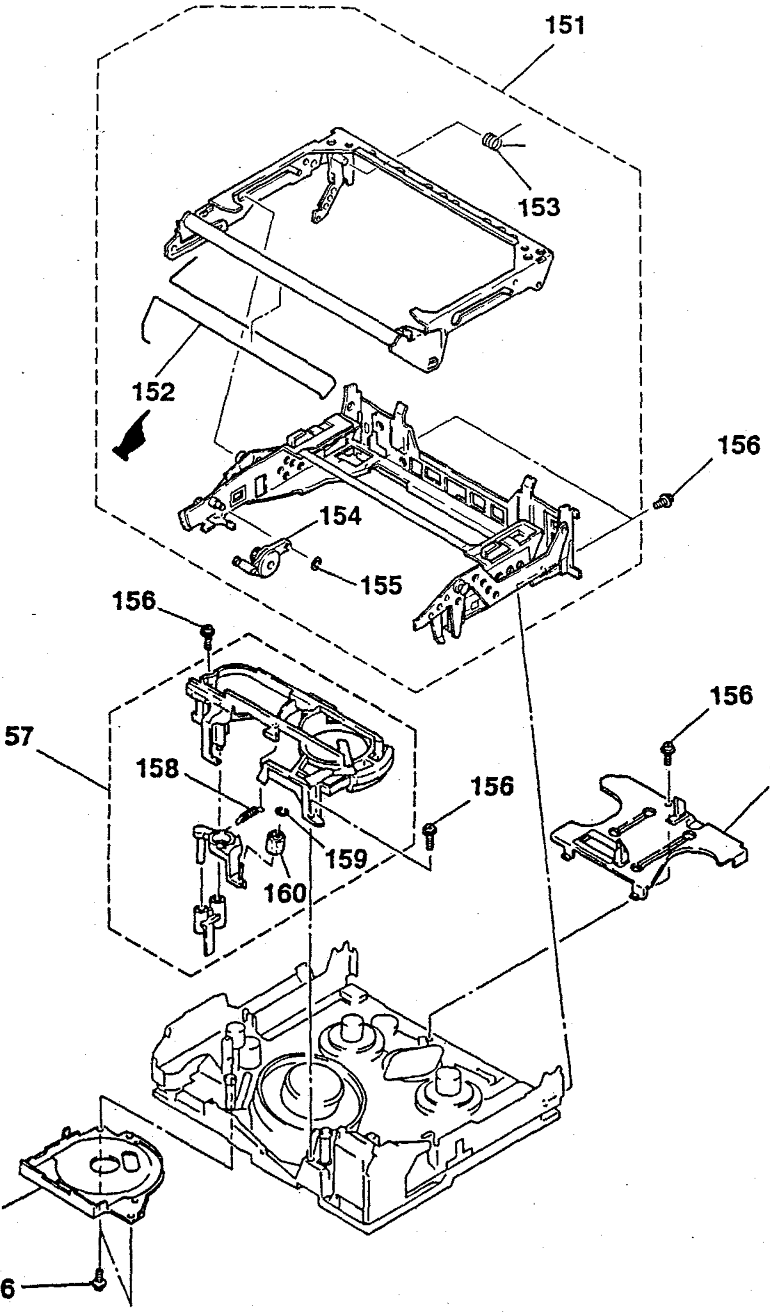

Q001
PT4600FS
TOP
SENSOR
D001
GL4600S
T/E
LED
Q002
PT4600FS
END
SENSOR
T/E LED ON 1
MT 5V 2
TOP SENS 3
END SENS 4
T REEL (+) 5
T REEL (-) 6
REEL HALL CONT 7
S REEL (+) 8
S REEL (-) 9
13U/7U 10
13U/10U 11
SS GND 12
MP/ ME 13
HG SW 14
REC PROOF 15
R011
220
R004
220
H001
LT140SAZ
R003
220
H002
LT140SAZ
R010
220
S002
REC PROOF.
TAPE SELECT
LS-33 BOARD

Ref. No.	Part No.	Description	Remark
		LS-33 BOARD, COMPLETE **********************	
		< DIODE >	
D001	8-719-989-52	DIODE GL4600S	
		< DIODE >	
H001	8-719-987-62	DIODE LT140SAZ	
H002	8-719-987-62	DIODE LT140SAZ	
		< TRANSISTOR >	
Q001	8-729-012-46	TRANSISTOR PT4600FS	
Q002	8-729-012-46	TRANSISTOR PT4600FS	
		< RESISTOR >	
R003	1-216-033-00	METAL CHIP 220 5% 1/10W	
R004	1-216-033-00	METAL CHIP 220 5% 1/10W	
R010	1-216-033-00	METAL CHIP 220 5% 1/10W	
R011	1-216-033-00	METAL CHIP 220 5% 1/10W	
		< SWITCH >	
S002	1-572-987-11	SWITCH, PUSH (3 KEY) (REC PROOF, TAPE SELECT)	

5-4. CASSETTE COMPARTMENT ASSEMBLY

☛ : Changed Portion




151
153
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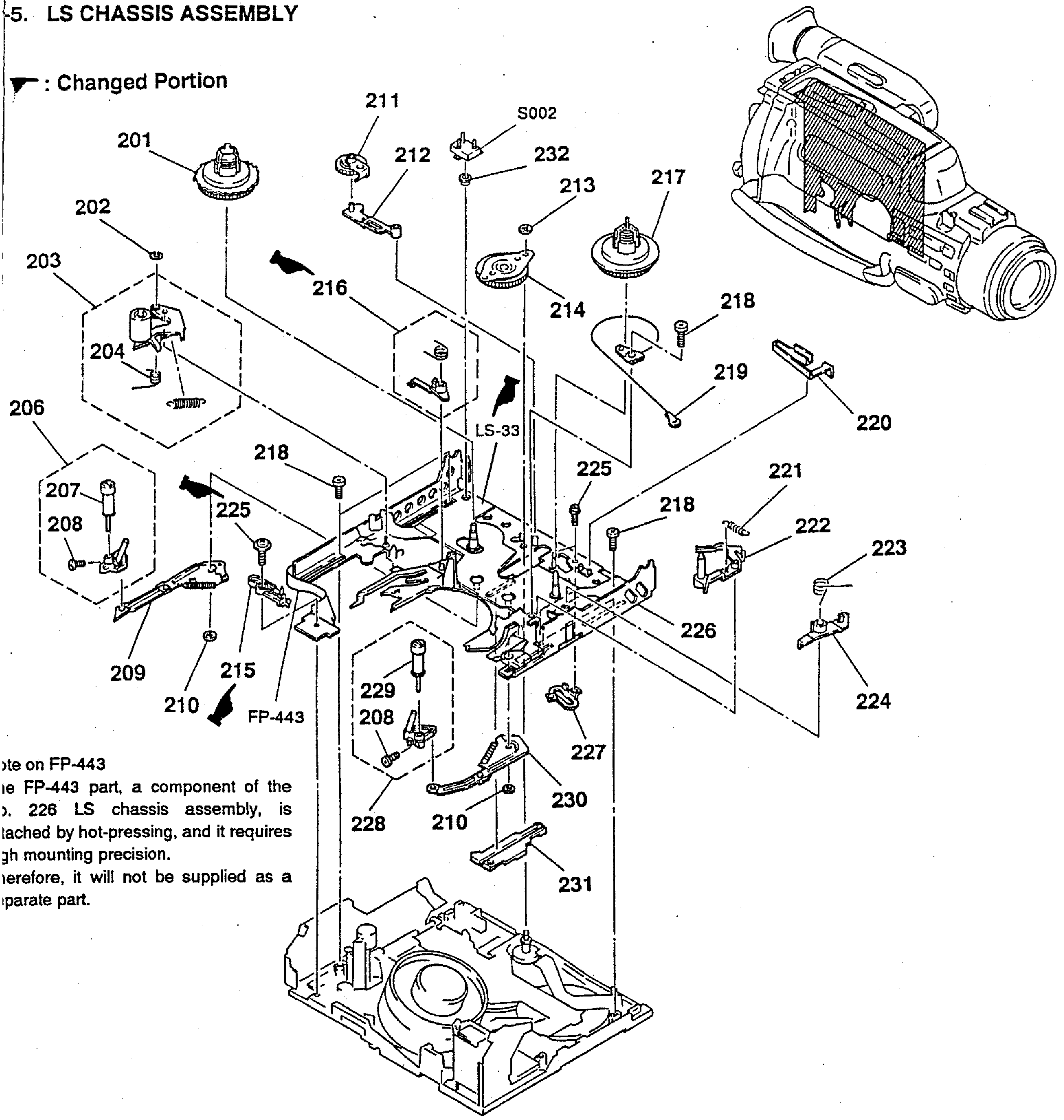
162
156

Ref. No.	Part No.	Description	Remark
151	A-7040-312-H	CASSETTE COMPARTMENT BLOCKASSY	
152	3-945-773-01	BAR, TORSION	
153	3-945-771-01	SPRING, TORSION	
154	X-3941-287-2	DAMPER ASSY	
155	3-315-384-31	WASHER, STOPPER	
156	3-947-503-01	SCREW (M1.4X2.5)	

Ref. No.	Part No.	Description
157	A-7040-309-A	PROTECT (BASE) BLOCK ASSY
158	3-945-760-01	SPRING, TENSION
159	3-321-393-01	WASHER, STOPPER
160	X-3166-813-1	ROLLER ASSY, HC
161	X-3941-280-1	RETAINER ASSY, GOOSENECK
162	3-945-733-01	COVER, CAPSTAN

-5. LS CHASSIS ASSEMBLY

▼ : Changed Portion



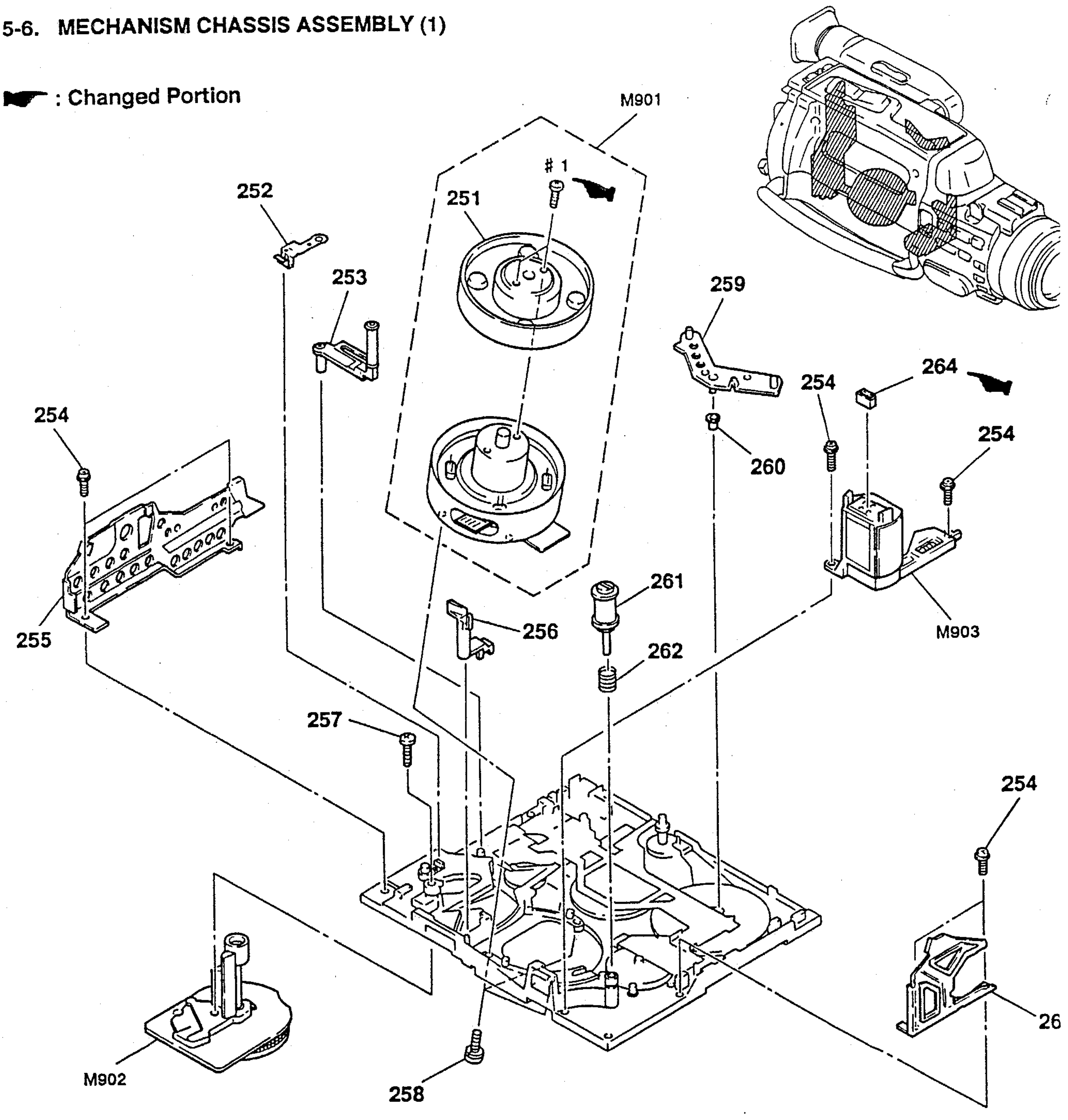
›te on FP-443
ıe FP-443 part, a component of the ›. 226 LS chassis assembly, is ‹ached by hot-pressing, and it requires ʒh mounting precision.
ıerefore, it will not be supplied as a ıparate part.

.No.	Part No.	Description	Remark
01	X-3941-274-1	TABLE ASSY, REEL, T	
02	3-331-007-21	WASHER	
03	X-3941-271-5	ARM ASSY, PINCH	
04	3-945-743-01	SPRING, TORSION	
06	A-7040-307-A	GUIDE (BASE) (T) BLOCK ASSY	
07	X-3941-424-1	ROLLER ASSY, TG6	
08	3-947-504-01	SCREW (M1.2X2)	
09	X-3941-267-1	ARM (T) ASSY, GUIDE	
10	3-669-465-00	WASHER (1.5), STOPPER	
11	X-3941-273-1	SOFT ASSY, T	
12	3-945-753-01	ARM, T SOFT	
13	3-726-829-01	WASHER, STOPPER	
14	X-3941-279-5	GEAR ASSY, GOOSENECK	
15	3-947-644-01	RETAINER, TG5 (BASE)	▼
16	A-7040-321-A	CLAW BLOCK ASSY, T HARD	▼
17	X-3941-275-6	TABLE ASSY, REEL, S	
18	3-945-756-01	SCREW (M1.4X3)	

Ref. No.	Part No.	Description	Remark
219	X-3941-277-1	STRING BLOCK ASSY	
220	3-945-801-01	BRAKE, S SOFT	
221	3-948-810-01	SPRING, TENSION	
222	X-3941-276-1	TG1 ASSY	
223	3-945-752-01	SPRING, TORSION	
224	3-945-799-01	BRAKE, S HARD	
225	3-947-503-01	SCREW (M1.4X2.5)	
226	X-3941-265-1	CHASSIS ASSY, LS	
227	3-945-784-01	PLATE, CAM, LS	
228	A-7040-306-A	GUIDE (BASE) (S) BLOCK ASSY	
229	X-3941-269-1	ROLLER ASSY, TG3	
230	X-3941-266-1	ARM (S) ASSY, GUIDE	
231	3-945-837-01	SLIDER, GL	
232	3-949-881-01	SLEEVE	
S002	1-572-987-11	SWITCH, PUSH (3 KEY) (REC PROOF, ME/MP, MP/MP-HG)	

5-6. MECHANISM CHASSIS ASSEMBLY (1)

☛ : Changed Portion



※ The mark differs according to the model.

Ref. No.	Part No.	Description
251	※	DRUM ASSY, UPPER ※
252	3-945-822-01	SPRING, LEAF, TG7 ARM
253	A-7040-305-A	ARM BLOCK ASSY, TG7
254	3-947-503-01	SCREW (M1.4X2.5)
255	X-3941-255-1	PLATE (T) ASSY, SIDE
256	3-945-735-01	ARM, HC CONVERSION
257	3-713-786-71	SCREW (M2X5)
258	3-686-493-01	SCREW (M2X5), P1
259	3-945-701-01	ARM, LS

Remark	Ref. No.	Part No.	Description
	260	3-945-702-01	ROLLER, LS
	261	X-3941-262-1	ROLLER ASSY, TG2
	262	3-945-774-01	SPRING, COMPRESSION ☛
	263	3-945-691-01	PLATE (S), SIDE
	264	1-568-323-11	CONNECTOR, BOARD TO BOARD 4P
	M901	※	DRUM ASSY ※
	M902	8-835-477-01	MOTOR, DC SCE-0101A (CAPSTAN)
	M903	A-7040-304-A	MOTOR BLOCK ASSY, LM (LOADING)
	#1	7-627-853-59	SCREW (+P 2X5) ☛

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Personal Video Group

Published by CV Quality Engineering D

8mm Video MECHANICAL ADJUSTMENT MANUAL IV

A MECHANISM

SUPPLIMENT-2

Video 8

〈Connection of Mode Selector IV Conversion Connector〉

In use of Mode selector IV conversion connector(J-6082-167-A), there are two different connecting methods depending on the model connected:

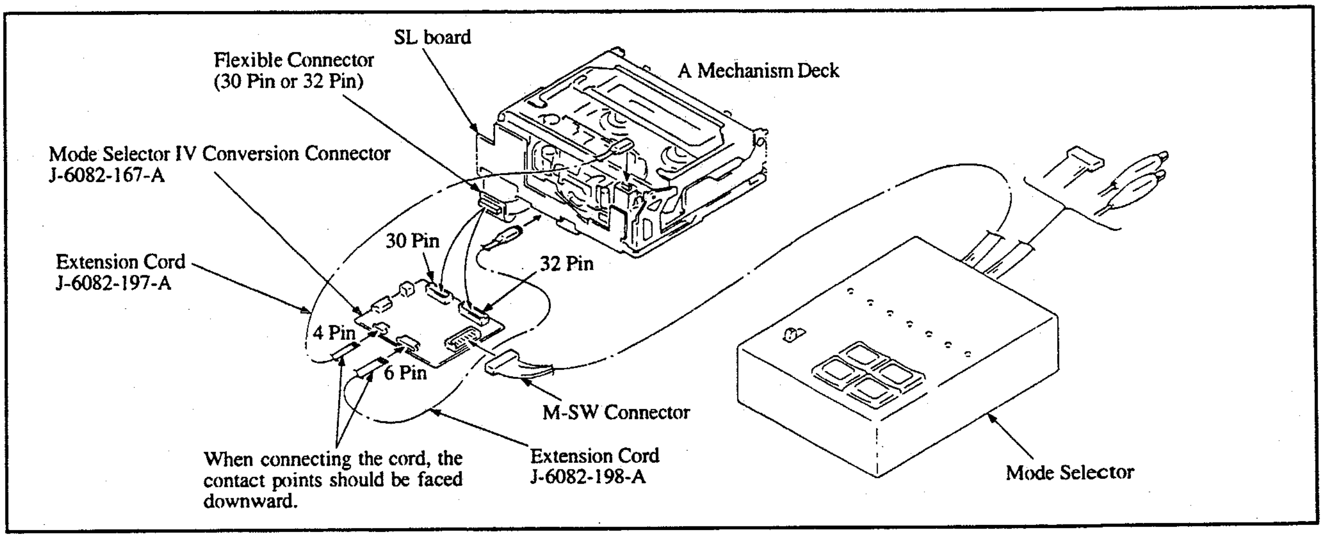
1. CCD-FX series

With the SL board mounted on mechanical deck, connect 30-pin(or 32-pin) connector to 30-pin(or 32-pin) Mode selector IV conversion connector.

CCD-FX300 series, FX400 series. FX500 series
→ 30-pin connector (FP425 or FP600)
CCD-FX700 series → 32-pin connector (FP477)

2. Models other than above

Connect the extension cord (J-6082-197-A) to loading motor 4-pin connector and extension cord (J-6082-198-A) to mode switch 6-pin connector in mechanical deck, then connect the other end of cord to 4-pin and 6-pin connectors of Mode selector IV conversion connector respectively, as shown below.


SL board
Flexible Connector
(30 Pin or 32 Pin)
A Mechanism Deck
Mode Selector IV Conversion Connector
J-6082-167-A
30 Pin
32 Pin
Extension Cord
J-6082-197-A
4 Pin
6 Pin
M-SW Connector
When connecting the cord, the contact points should be faced downward.
Extension Cord
J-6082-198-A
Mode Selector

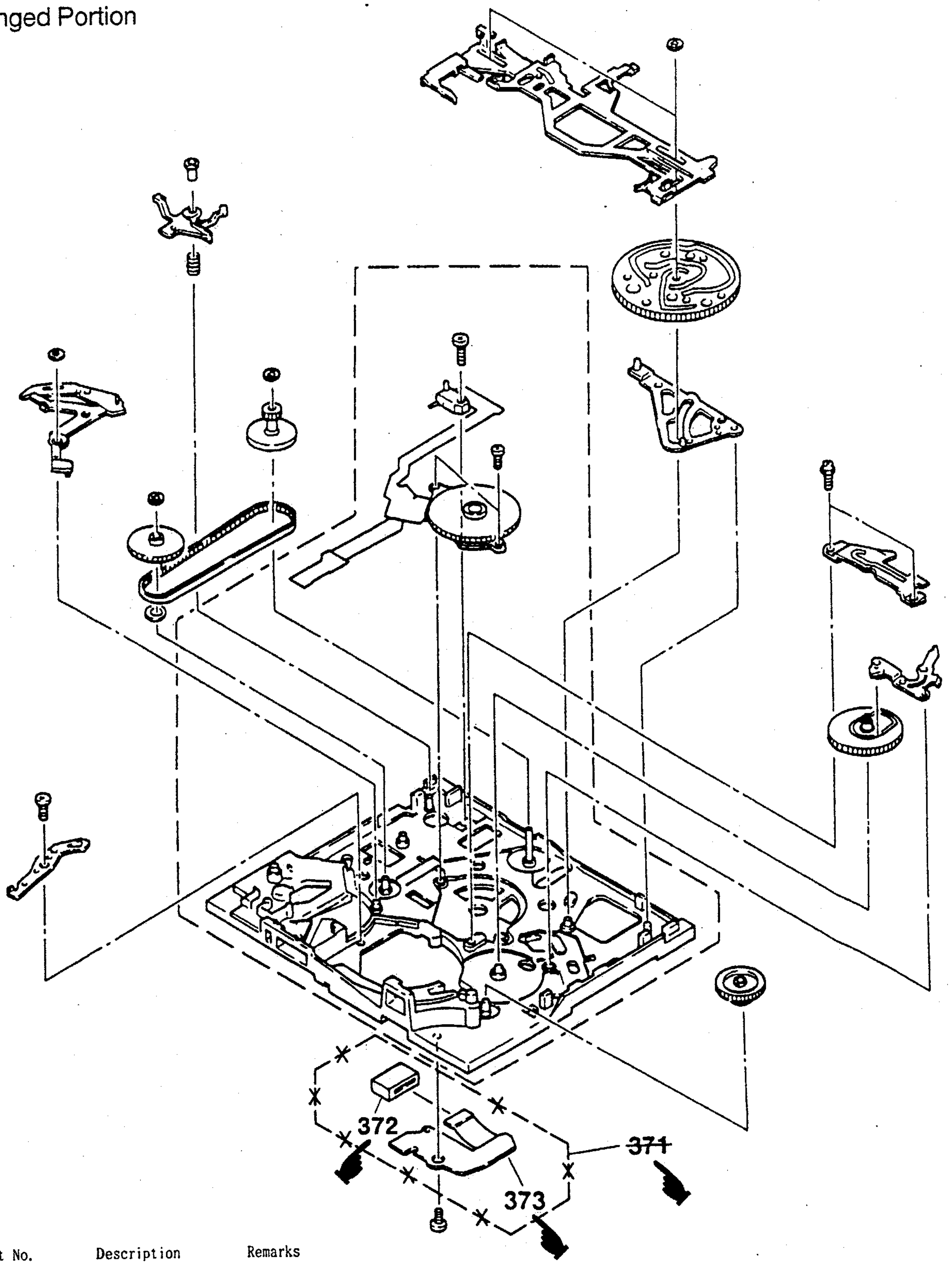
〈CORRECTION〉

P10. 2-4 Service jigs list

		Incorrect		Correct
J-15	FWD B.T adjusting driver	J-6082-182-A	➡	J-6082-187-A

MECHANISM CHASSIS ASSEMBLY (2)

☛ : Changed Portion



Ref.No.	Part No.	Description	Remarks
~~371~~	~~A-7040-311-A~~	~~FP-444 ASSY~~	☛
372	1-691-254-13	CONNECTOR, TRANSLATION 10P	☛
373	1-641-639-13	FP-442 FLEXIBLE BOARD	☛

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Published by CV Quality Engineering DIV.

Sony Corporation
Personal Video Group

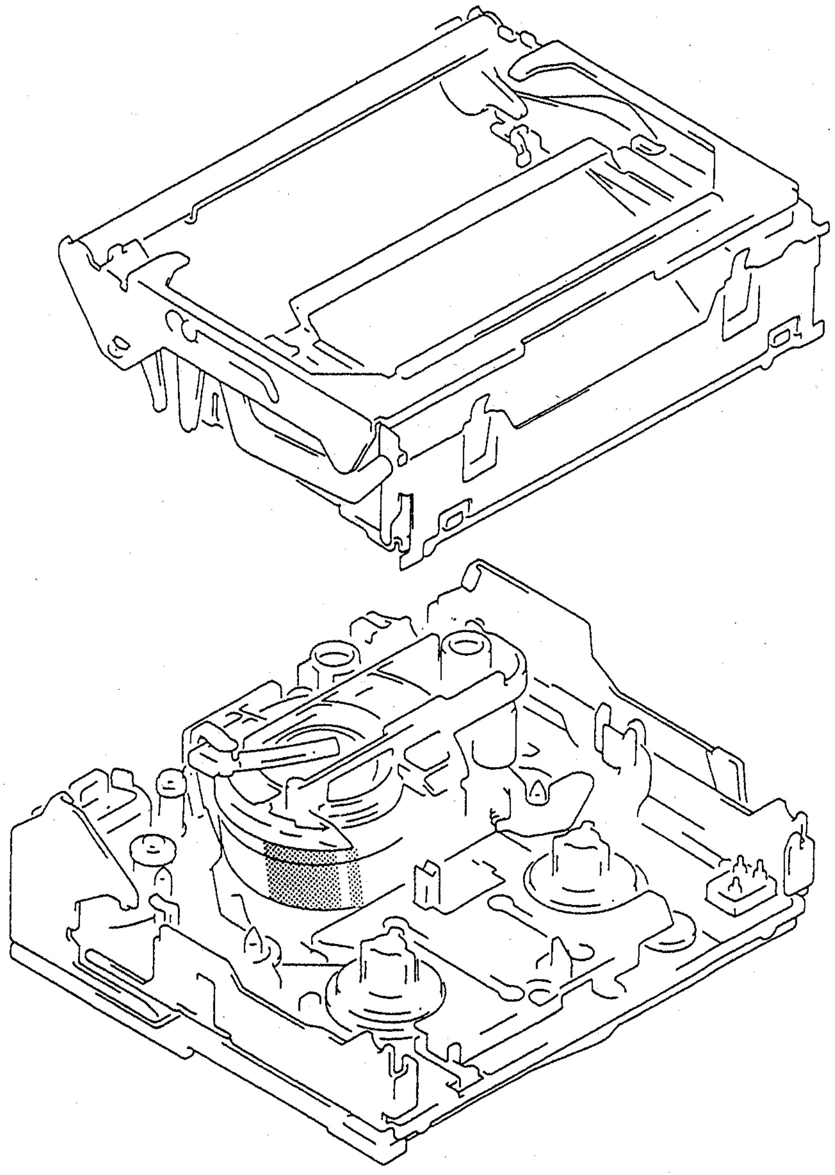
8 mm Video MECHANICAL ADJUSTMENT MANUAL Ⅳ

V12995

A MECHANISM

Video 8

File with the SERVICE MANUAL



8 VIDEO RECORDER

SONY®

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1. PREPARATION FOR MECHANICAL CHECK, ADJUSTMENT AND REPLACEMENT

For removal of the cabinet and boards, refer to "Disassembly" in each Service Manual.
Mechanical adjustment is done in the USE mode. (To select the USE mode, refer to "1-3, Handling of Mode Selector".)

1-1. CASSETTE COMPARTMENT ASSEMBLY

1. Removal (Fig. 1)

1) Select the USE mode.
2) Push the part ⓐ of lock arm ❶ toward the arrow Ⓐ to unlock from lock guide ❷, and raise the cassette compartment as shown in Fig. a.
3) Remove two screws ❸ and remove the LS frame ❹ toward the arrow Ⓑ.
4) With the cassette compartment assembly ❺ pushed in arrow Ⓒ direction, distort tabs ⓑ and ⓒ of MD side plate toward the arrow Ⓓ to disengage from catches ⓓ and ⓔ of cassette compartment assembly respectively. In such a case, insert a screwdriver between MD side plate and catch and disengage the tab ⓑ first, then disengage the tab ⓒ for easy removal as shown in Fig. b.
5) Raise the cassette compartment assembly ❺ in the opposite direction of arrow Ⓒ until the shafts ⓕ and ⓖ are disengaged, and push left and right side plates toward arrow Ⓓ to remove the cassette compartment assembly.

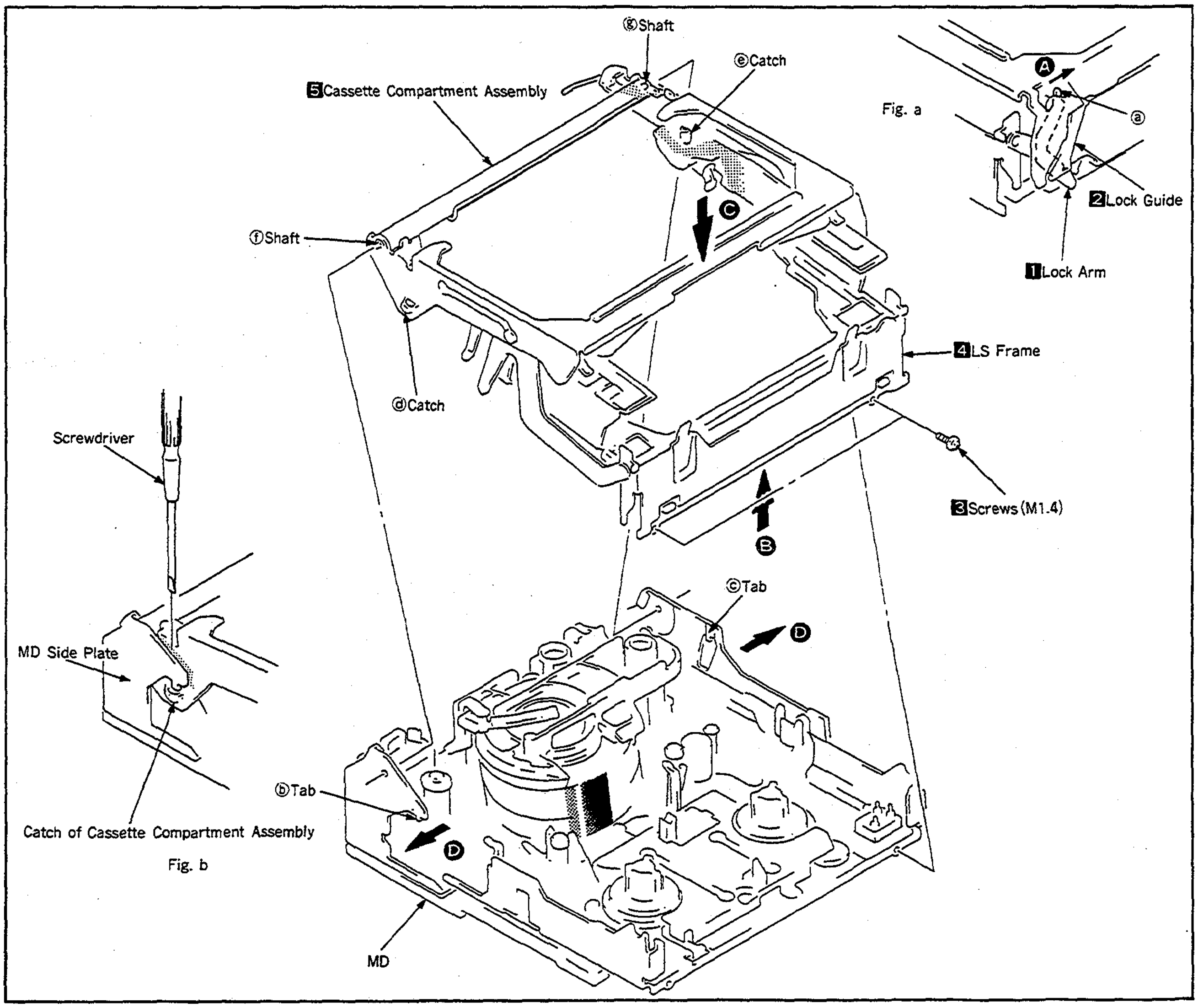

ⓖShaft
ⓔCatch
❺Cassette Compartment Assembly
Fig. a
Ⓐ
ⓐ
❷Lock Guide
❶Lock Arm
Ⓒ
ⓕShaft
❹LS Frame
ⓓCatch
Screwdriver
❸Screws (M1.4)
Ⓑ
ⓒTab
Ⓓ
MD Side Plate
ⓑTab
Catch of Cassette Compartment Assembly
Fig. b
Ⓓ
MD

Fig. 1

2. Mounting (Fig. 2)

1) Select the USE mode.
2) Draw the cassette holder ❻ of cassette compartment assembly ❺ toward the arrow 🅔, and lower the LS frame ❹ toward the arrow 🅕.
3) With the cassette compartment assembly ❺ tilted by about 45° against MD, insert shafts ⓕ and ⓖ of cassette compartment assembly into holes ⓗ and ⓘ of MD side plate respectively.
   At this time, the part ⓙ of torsion bar must be positioned on the side ⓚ of LS flexible board (FP-443) (not on the side ⓛ), as shown in Fig. c.
4) Holding holes ⓗ and ⓘ of MD side plate, press the cassette compartment assembly ❺ so that its catches ⓓ and ⓔ are engaged with tabs ⓑ and ⓒ of MD side plate. In such a case, the lock arm ❶ of cassette compartment assembly must be inserted into a groove in the guide rail ❼ on the MD side plate as shown in Fig. d.
5) Insert left and right side plates ⓜ and ⓝ of LS frame ❹ inside the LS chassis ❽.
6) Push down the cassette compartment to lock.

Note : Make sure that the shafts ⓕ, ⓖ and the tabs ⓞ, ⓟ are set in the MD side plate properly.

7) Tighten two screws ❸.

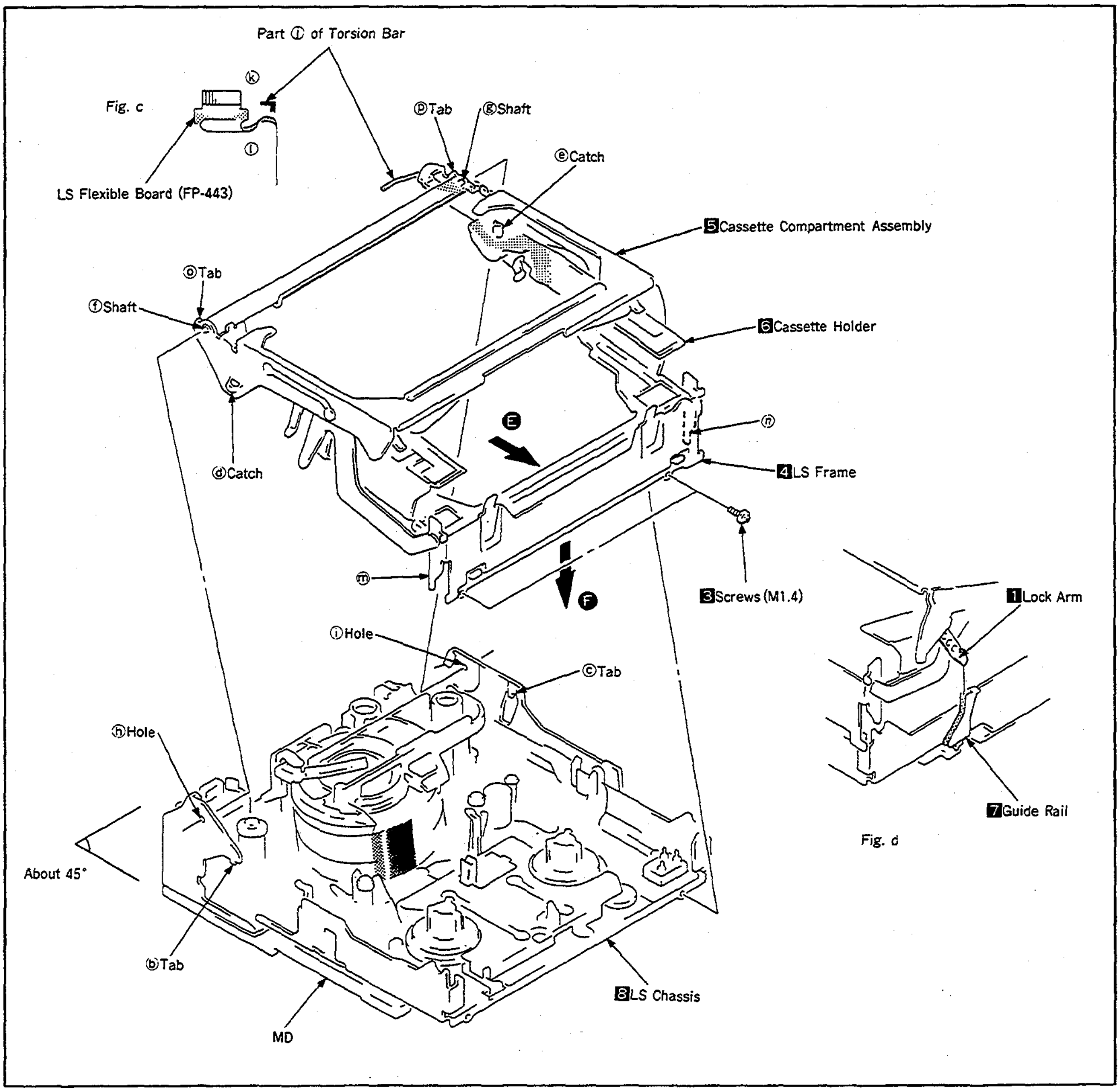

Part ⓙ of Torsion Bar
ⓚ
Fig. c
ⓛ
LS Flexible Board (FP-443)
ⓟTab
ⓖShaft
ⓔCatch
❺Cassette Compartment Assembly
ⓞTab
ⓕShaft
❻Cassette Holder
🅔
ⓝ
❹LS Frame
ⓓCatch
ⓜ
🅕
❸Screws (M1.4)
❶Lock Arm
ⓘHole
ⓒTab
ⓗHole
About 45°
ⓑTab
❽LS Chassis
MD
❼Guide Rail
Fig. d

Fig. 2

1-2. OPERATION WITH CASSETTE COMPARTMENT ASSEMBLY REMOVED (Fig. 3)

1) Referring to the Service Manual, supply power with the cabinet and camera removed. (Make the mechanical deck ready to operate.)
2) Place the cap ❷ on the Reflector C ❶.
3) Press the pin of the push switch ❸ (ON state) and fix it with adhesive tape ❹ in that state.

Note : Press the asterisked (＊) pin to set the REC mode.
(This is not required for the other modes.)

4) Push the cassette compartment DOWN switch ❺ in an arrow direction as shown in Fig. a.

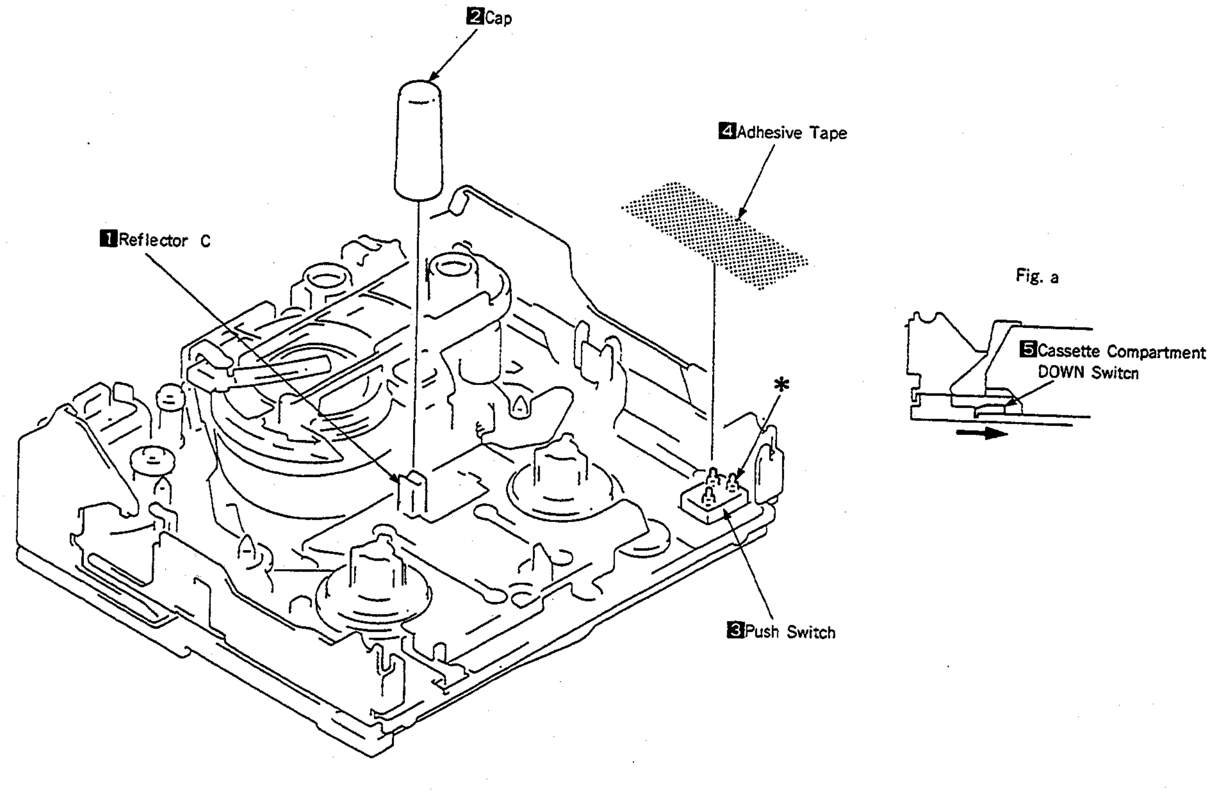

❷Cap
❹Adhesive Tape
❶Reflector C
Fig. a
❺Cassette Compartment DOWN Switcn
＊
❸Push Switch

Fig. 3

1-3. HANDLING OF MODE SELECTOR

- Stick the MD process table label to the mode selector IV panel, then mount the panel on the mode selector.
  U,U', FL, O, O' and A mechanisms have different mode indications respectively. Select your disired type. (Fig.4)

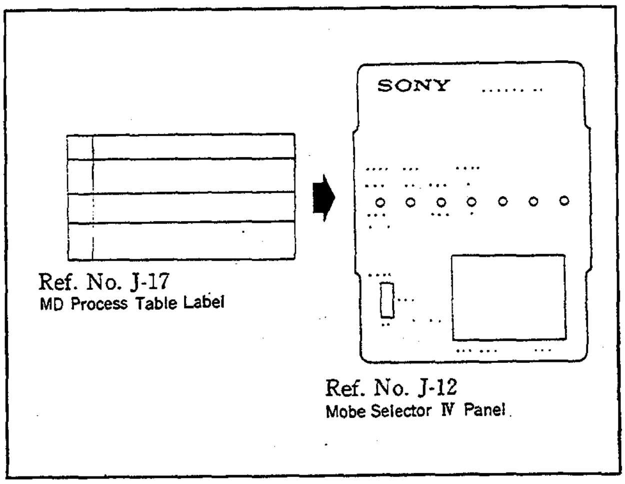

SONY
Ref. No. J-17
MD Process Table Label
Ref. No. J-12
Mobe Selector IV Panel.

Fig. 4

1 Construction (Fig.5)

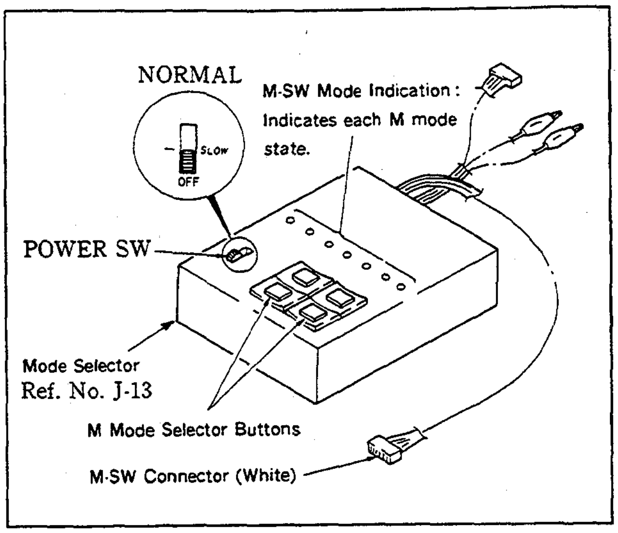

NORMAL
SLOW
OFF
M-SW Mode Indication : Indicates each M mode state.
POWER SW
Mode Selector
Ref. No. J-13
M Mode Selector Buttons
M-SW Connector (White)

Fig. 5

2 Connection (Fig.6)

For CCD-FX410 series

1) Insert the FP-425 flexible connector ❶ and M-SW connector ❷ into the mode selector IV conversion connector ❸ respectively.

3. Handling

1) Use the M mode selector buttons only.
2) During mode selection, "BLANK" lights up when no mode is being selected.
3) If the right M mode selector button is kept pressed, END, EJECT, USE, LOAD, READY,TURN, REC and FF light up in that order.
4) When changing over from the FF mode back to the END mode, press the left M mode selector botton to select your desired mode.

For CCD-FX410 series

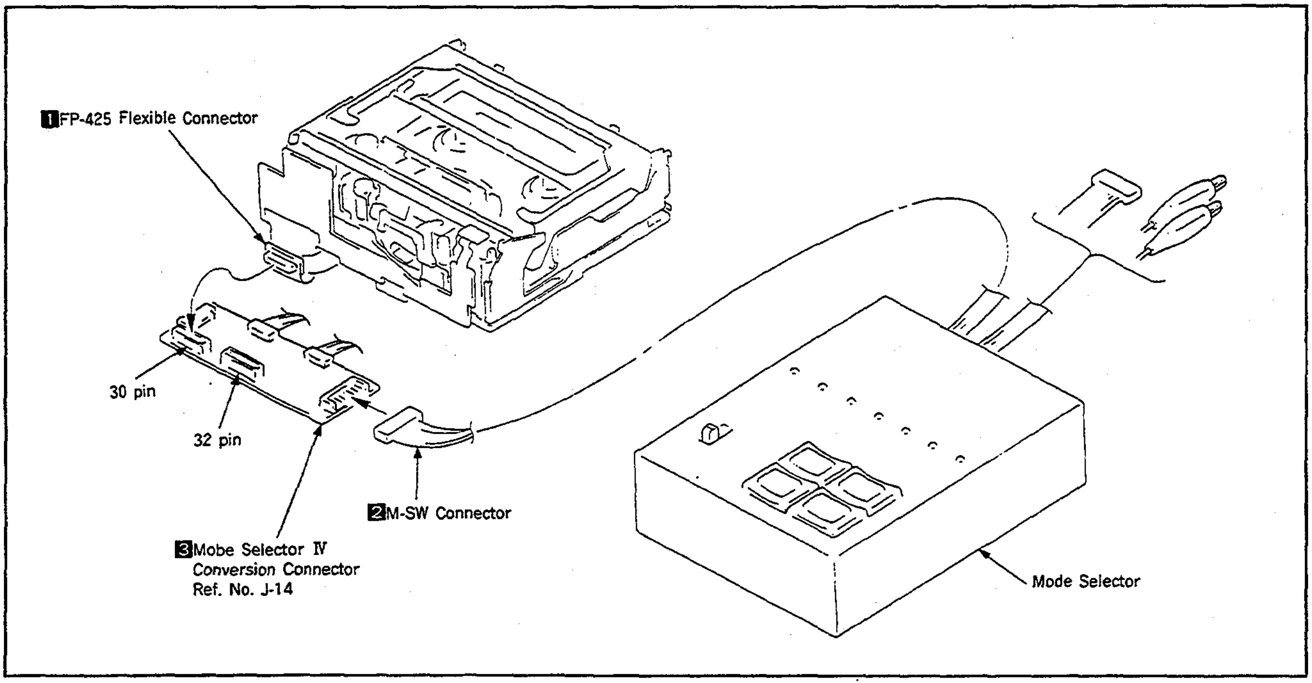
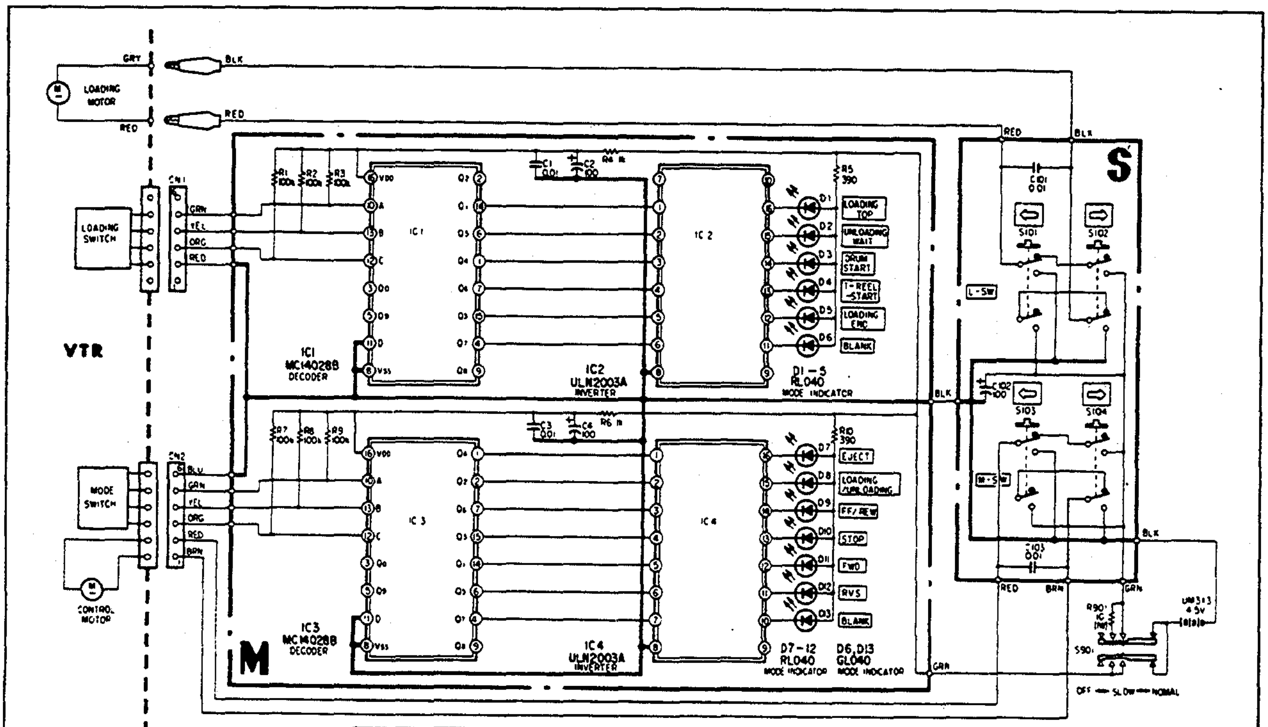

❶FP-425 Flexible Connector
30 pin
32 pin
❷M-SW Connector
❸Mobe Selector IV
Conversion Connector
Ref. No. J-14
Mode Selector

Fig. 6

1-4. MODE SELECTOR SCHEMATIC DIAGRAM


VTR
LOADING MOTOR
GRY
RED
BLK
RED
LOADING SWITCH
CN1
GRN
YEL
ORG
RED
MODE SWITCH
CONTROL MOTOR
CN2
BLU
GRN
YEL
ORG
RED
BRN
R1 100k
R2 100k
R3 100k
C1 0.01
C2 100
R4 1k
IC1
VDD
A
B
C
Q0
Q9
D
VSS
IC1 MC14028B DECODER
IC2 ULN2003A INVERTER
IC 2
R5 390
D1
D2
D3
D4
D5
D6
LOADING TOP
UNLOADING WAIT
DRUM START
T-REEL -START
LOADING END
BLANK
D1 – 5 RL040 MODE INDICATOR
R7 100k
R8 100k
R9 100k
C3 0.01
C4 100
R6 1k
IC 3
IC3 MC14028B DECODER
IC4 ULN2003A INVERTER
IC 4
M
R10 390
D7
D8
D9
D10
D11
D12
D13
EJECT
LOADING /UNLOADING
FF/REW
STOP
FWD
RVS
BLANK
D7 – 12 RL040 MODE INDICATOR
D6, D13 GL040 MODE INDICATOR
S
RED
BLK
C101 0.01
S101
S102
L-SW
BLK
C102 100
S103
S104
M-SW
BLK
C103 0.01
RED
BRN
GRN
GRN
R901 10 (1W)
UM3×3 4.5V
S901
OFF ← SLOW ← NOMAL

M-SW
IC 31

DECODER INPUT			MODE	LED NO
C	B	A		
0	0	0		
0	0	1	FWD	D11
0	1	0	LOADING/UNLOADING	D8
0	1	1	STOP	D10
1	0	0	EJECT	D7
1	0	1	RVS	D12
1	1	0	FF/REW	D9
1	1	1	BLANK	D13

0: INPUT LEVEL L
1 INPUT LEVEL H

L-SW
IC 11

DECODER INPUT			MODE	LED NO
C	B	A		
0	0	0		
0	0	1	LOADING TOP	D1
0	1	0		
0	1	1	LOADING END	D5
1	0	0	DRUM START	D3
1	0	1	UNLOADING WAIT	D2
1	1	0	T-REEL -START	D4
1	1	1	BLANK	D6

SWITCH		DIRECTION OF MOTOR REVOLUTION
⇦	⇨	
OFF	OFF	STOP
ON	OFF	⇦
OFF	ON	⇨

⇦ L-SW LOADING END ← LOADING TOP
M-SW RVS ← EJECT

⇨ L-SW LOADING TOP ← LOADING END
M-SW EJECT ← RVS

1-5. MODE SELECTOR PARTS LIST

Ref. No	Part No.	Description		
		CAPACITOR		
C1	1-108-579-00	MILER	0.01μF	50V
C2	1-123-333-00	ELECT	100μF	24V
C3	1-108-579-00	MILER	0.01μF	50V
C4	1-123-333-00	ELECT	100μF	24V
C101	1-108-579-00	MILER	0.01μF	50V
C102	1-123-333-00	ELECT	100μF	24V
C103	1-108-579-00	MILER	0.01μF	50V
		DIODE		
D1	8-719-812-31	DIODE TLR123		
D2	8-719-812-31	DIODE TLR123		
D3	8-719-812-31	DIODE TLR123		
D4	8-719-812-31	DIODE TLR123		
D5	8-719-812-31	DIODE TLR123		
D6	8-719-812-33	DIODE TLG123A		
D7	8-719-812-31	DIODE TLR123		
D8	8-719-812-31	DIODE TLR123		
D9	8-719-812-31	DIODE TLR123		
D10	8-719-812-31	DIODE TLR123		
D11	8-719-812-31	DIODE TLR123		
D12	8-719-812-31	DIODE TLR123		
D13	8-719-812-33	DIODE TLG123A		

Ref. No	Part No.	Description		
		IC		
IC1	8-752-240-28	IC TC4028BP		
IC2	8-752-120-03	IC μPA2003C		
IC3	8-759-240-28	IC TC4028BP		
IC4	8-759-120-03	IC μPA2003C		
		RESISTOR		
R1	1-247-179-00	CARBON	100K	1/4W
R2	1-247-179-00	CARBON	100K	1/4W
R3	1-247-179-00	CARBON	100K	1/4W
R4	1-247-131-00	CARBON	1K	1/4W
R5	1-247-121-00	CARBON	390	1/4W
R6	1-247-131-00	CARBON	1K	1/4W
R7	1-247-179-00	CARBON	100K	1/4W
R8	1-247-179-00	CARBON	100K	1/4W
R9	1-247-179-00	CARBON	100K	1/4W
R10	1-247-121-00	CARBON	390	1/4W
R901	1-214-594-00	METAL	10	1W

2. PERIODIC CHECK AND MAINTENANCE

- Carry out the following maintenance and periodic checks in order not only to fully exhibit the functions and performance of the set, but also for the equipment and tape. After repairing, service the set as follows, regarless of the length of use.

2-1. CLEANING OF ROTARY DRUM ASSEMBLY

1) Gently apply chamois cloth (Ref. No. J-2) soaked in cleaning liquif (Ref. No.J-1) to the rotary drum assembly.
   Clean it by rotating the upper rotary drum assembly slowly counterclockwise by hand.

Note : Do not rotate the motor by power or rotate the upper rotary drum assembly clockwise by hand. Also, the head tip is highly likely to be damaged if the chamois cloth is moved in a pependicular direction to the it. make sure to follow the instructions above for cleaning the rotarydrum assembly.

2-2. CLEANING OF TAPE PATH (Fig.7)

1) In the USE mode, clean the tape running system (TG - 1,- 2,- 3,- 4,- 5, - 6, - 7, pinch roller, and capstan shaft) and the lower drum, using a super fine applicator (Ref. No. J - 3) soaked in the cleaning liquid.

Note : Note that no oil or grease of each link mechanism adheres to the super fine applicator (Ref. No. J - 3).

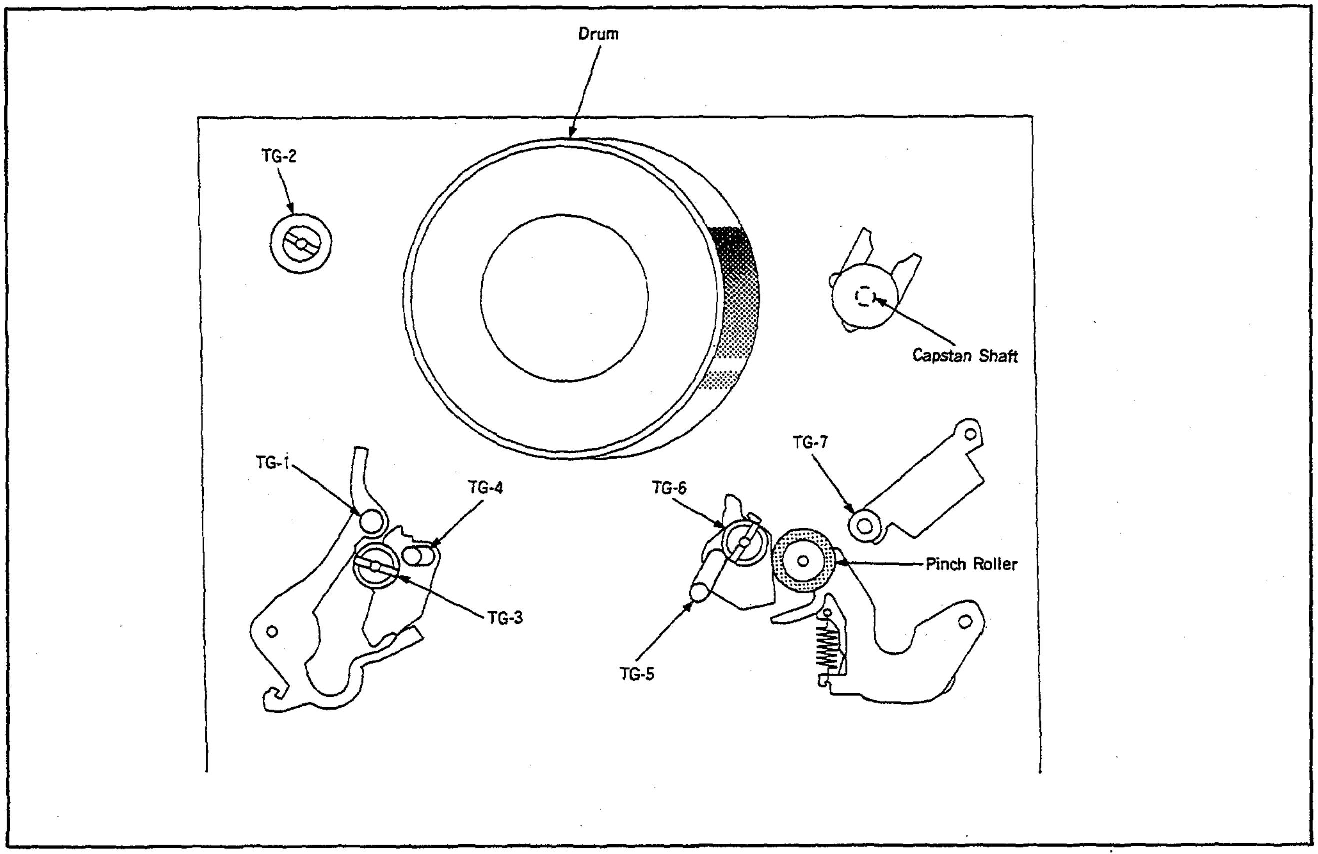


Fig. 7

2-3. PERILDIC CHECK ITEMS

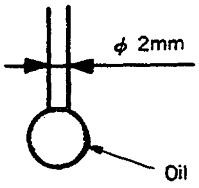
Location of Maintenance and check		Hours of Use (H)										Remarks
		500	1000	1500	2000	2500	3000	3500	4000	4500	5000	
Tape transportion System	Cleaning of tape path surface	○	○	○	○	○	○	○	○	○	○	Be careful of oil
	Cleaning and degaussing of rotary assembly	○	○	○	○	○	○	○	○	○	○	Be careful of oil
Driving System	Relay belt	—	☆	—	☆	—	☆	—	☆	—	☆	3-944-539-01
	Capstan shaft	—	◎	—	◎	—	◎	—	◎	—	◎	Be adsolutely careful not to get oil on the tape path surface.
	Relay pulley shaft	—	◎	—	◎	—	◎	—	◎	—	◎	
	Loading motor	—	☆	—	☆	—	☆	—	☆	—	☆	A-7040-304-A
Performance Confirmation	Abnormal noise	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	
	Back tension measurement	—	☆	—	☆	—	☆	—	☆	—	☆	
	Brake system	—	☆	—	☆	—	☆	—	☆	—	☆	
	FWD. RVS torque measurement	—	☆	—	☆	—	☆	—	☆	—	☆	

○ : Cleaning ◎ : Oil ☆ : Confirmation

Note : When overhauling, refer to the items above to replace parts.

Note : Concerning oil

- Be sure to use specified oil. (If you use oil with different visicosity, etc., it may cause troubles.)
  Oil : Part No. 7-661-018-18 (Mitsubishi Diamond Oil Hydrofluid NT - 68)
- When lubricating bearings, be sure use oil free from dust, etc. (If you use oil with dust, etc. contained, it may cause bearings to be worn out or seized.)
- A drip of oil refers to an amount attached to the tip of a ϕ 2mm stick shown in the right figure.

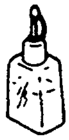


2-4. Service jigs list

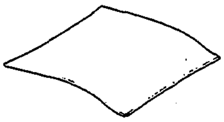
Ref. No.	Name	Part No.	Fixture No.	Usage and Others
J-1	Cleaning fluid	Y-2031-001-0		
J-2	Chamois cloth	2-034-697-00		
J-3	Super fine applicator (Made by NIPPON APPLICATOR, P752D)			
J-4	Head degausser	Widely available		
J-5	Small mirror for adjustment Spare mirror	J-6080-029-A J-6080-030-1	SL-5052	Tape path
J-6	Alignment tape NTSC (WR5-1N) PAL (WR5-1C)	8-967-995-01 8-967-995-06		Tape path
J-9	FWD and RVS winding torque cassette	J-6080-824-A	GD-2086	
J-10	Rotary drum jig	(Attached to the maintenance rotary upper drum)		
J-11	Screwdriver for tape path	J-6082-026-A		For tape guide adjustment
J-12	Mode selector Ⅳ panel	J-6082-105-A		
J-13	Mode selector	J-6080-825-A		For all models
J-14	Mode selector Ⅳ conversion connector	J-6082-167-A		
J-15	FWD B.T. adjusting driver	J-6082-182-A		
J-16	Adjusting remote controller	J-6082-053-B		Tape path (Setting of PATH mode)
J-17	MD process table label	J-6082-166-A		

Other equipment
- Oscilloscope
- Analog tester (20 kΩ)

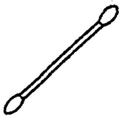
J-1



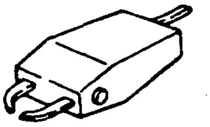
J-2



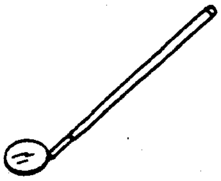
J-3



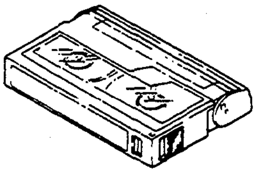
J-4



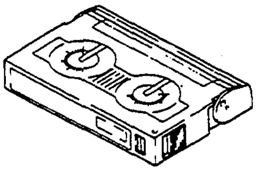
J-5



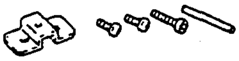
J-6



J-9

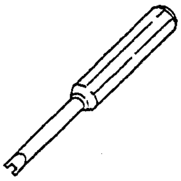


J-10

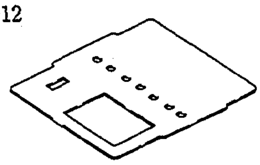


(Attached to the maintenance rotary upper drum)

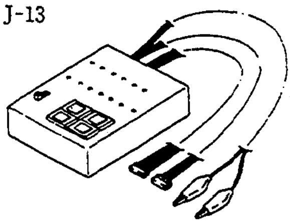
J-11



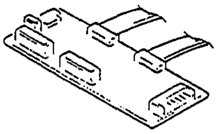
J-12



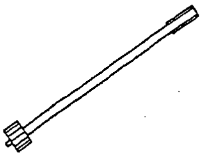
J-13



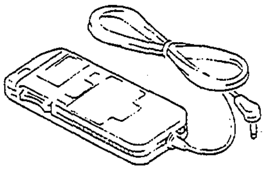
J-14



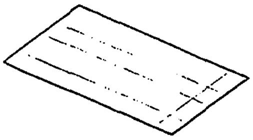
J-15



J-16



J-17



3. MECHANICAL CHECK, ADJUSTMENT AND REPLACEMENT

Note : Use the mode selector (Ref. No. J-13) for the following mechanical checks, adjustments and replacements.

Note : The modes in ☐ are those set by pressing the mode selector buttons.

3-1. RETAINER, GOOSENECK ASSEMBLY (Fig. 8)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Remove a screw ❶.
3) Remove the Retainer, Gooseneck assembly ❷.

2. Mounting

1) Mount the Retainer, Gooseneck assembly ❷ with its two tabs and holes of LS chassis engaged with its hole and a boss of LS chassis.
2) Tighten the screw ❶.
3) Referring to 1-1, mount the cassette compartment assembly.

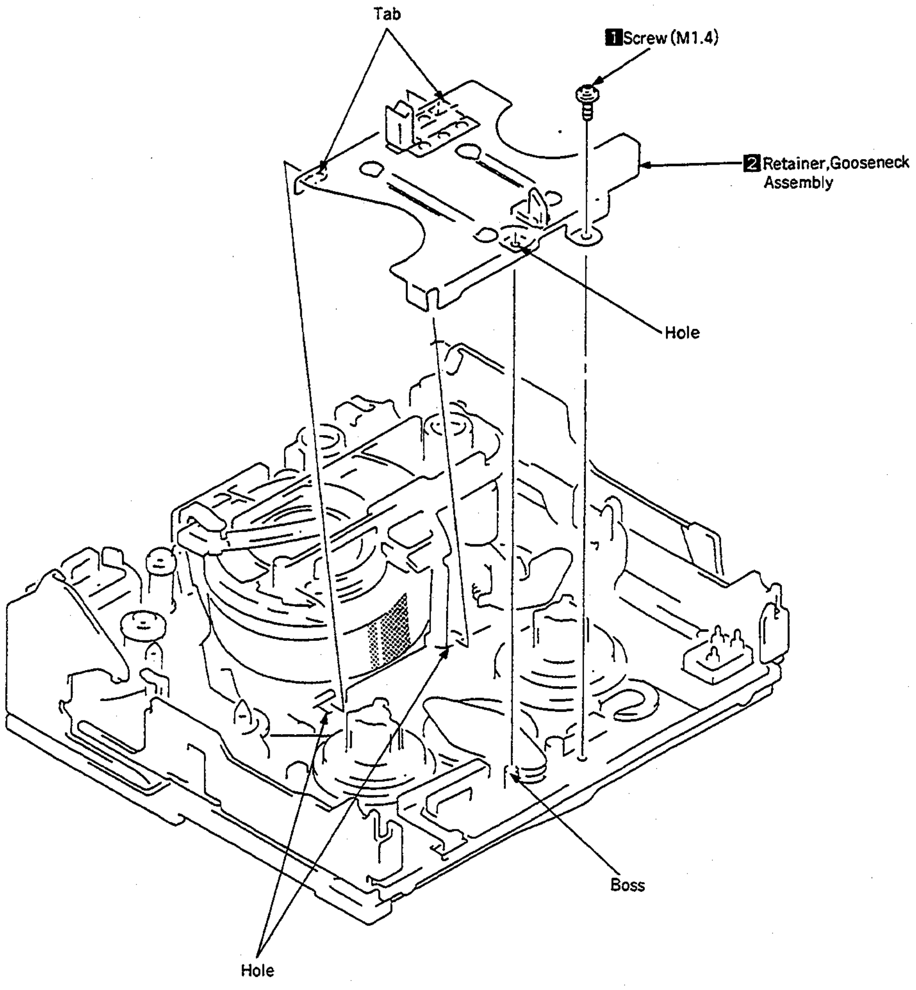


Fig. 8

3-2. PROTECTOR BASE ASSEMBLY (Fig. 9)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Remove two screws ❶, then the protector base assembly ❷.

2. Mounting

1) Mount the protector base assembly ❷ with its three hole. engaged with two dowels of mechanical chassis, and a dowel of TG-5 Base Holder ❸.
2) Tighten two screws ❶.
3) Referring to 1-1, mount the cassette compartment assembly.

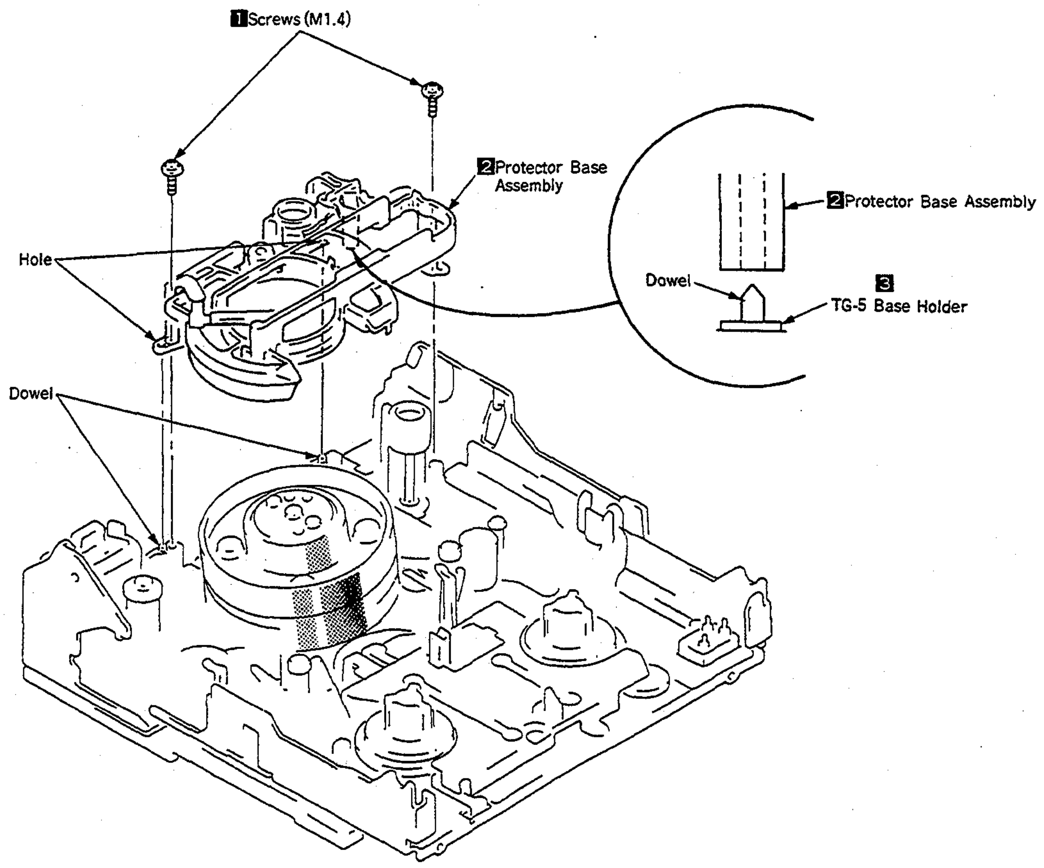

❶Screws (M1.4)
❷Protector Base Assembly
Hole
Dowel
❷Protector Base Assembly
Dowel
❸
TG-5 Base Holder

Fig. 9

3-3. DRUM ASSEMBLY (Fig. 10)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Referring to 3-2, remove the protect base assembly.
3) Disconnect the connector of FP-444 flexible board ❶ on the back of MD.
4) Remove three screw ❷, then the drum assembly ❸.

Note : Do not touch the outer surfaced of drum (hold portions Ⓐ and Ⓑ of drum).

2. Mounting

1) Mount the drum assembly ❸ while aligning with two dowels ⓐ of chassis.

Note : Do not touch the outer surfaced of drum (hold portions Ⓐ and Ⓑ of drum).

2) Tighten three screw assemblies ❷ in the order of 1, 2 and 3.

Note : Tighten lightly not to deform the drum lead.

3) Apply a screw locking agent to prevent screws ftom loosening.

Note : In tightening the screws, pushing down the drum extremely will allow the drum to float up.

4) Connect the connector of FP-444 flexible board ❶ on the back of MD.
5) Referring to 3-2, mount the protect base assembly.
6) Referring to 1-1, mount the cassette compartment assembly.

Note : After mounting, make tape path adjustment in Section 4.

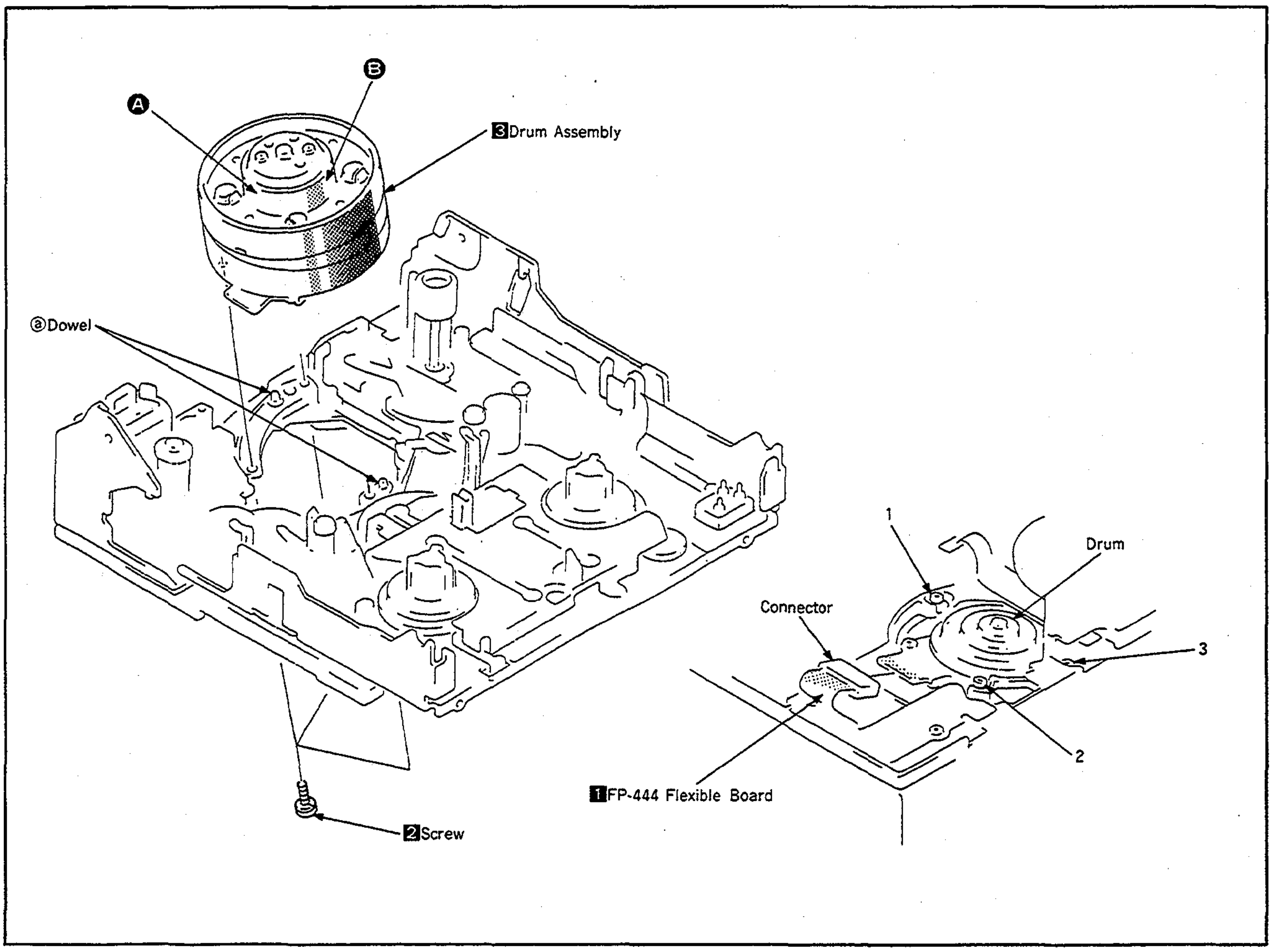


Fig. 10

3-4. CAPSTAN MOTOR ASSEMBLY (Fig. 11)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Remove two screw 1, then the capstan cover 2.
3) Remove the screw 3, then the capstan motor assembly 4.

2. Mounting

1) Mount the capstan motor assembly 4 and tighten the scre 3.

Note : In mounting the capstan motor assembly, hold lightly the capstan motor assembly until the rotor gear aligns with the change gear Assy, then insert fully the assembly when both gears are engaged completely by manually rotating the rotor. (Take care not to damage the change gear Assy.)

2) Mount the capstan cover 2 and tighten two screws 1.
3) Referring to 1-1, mount the cassette compartment assembly.

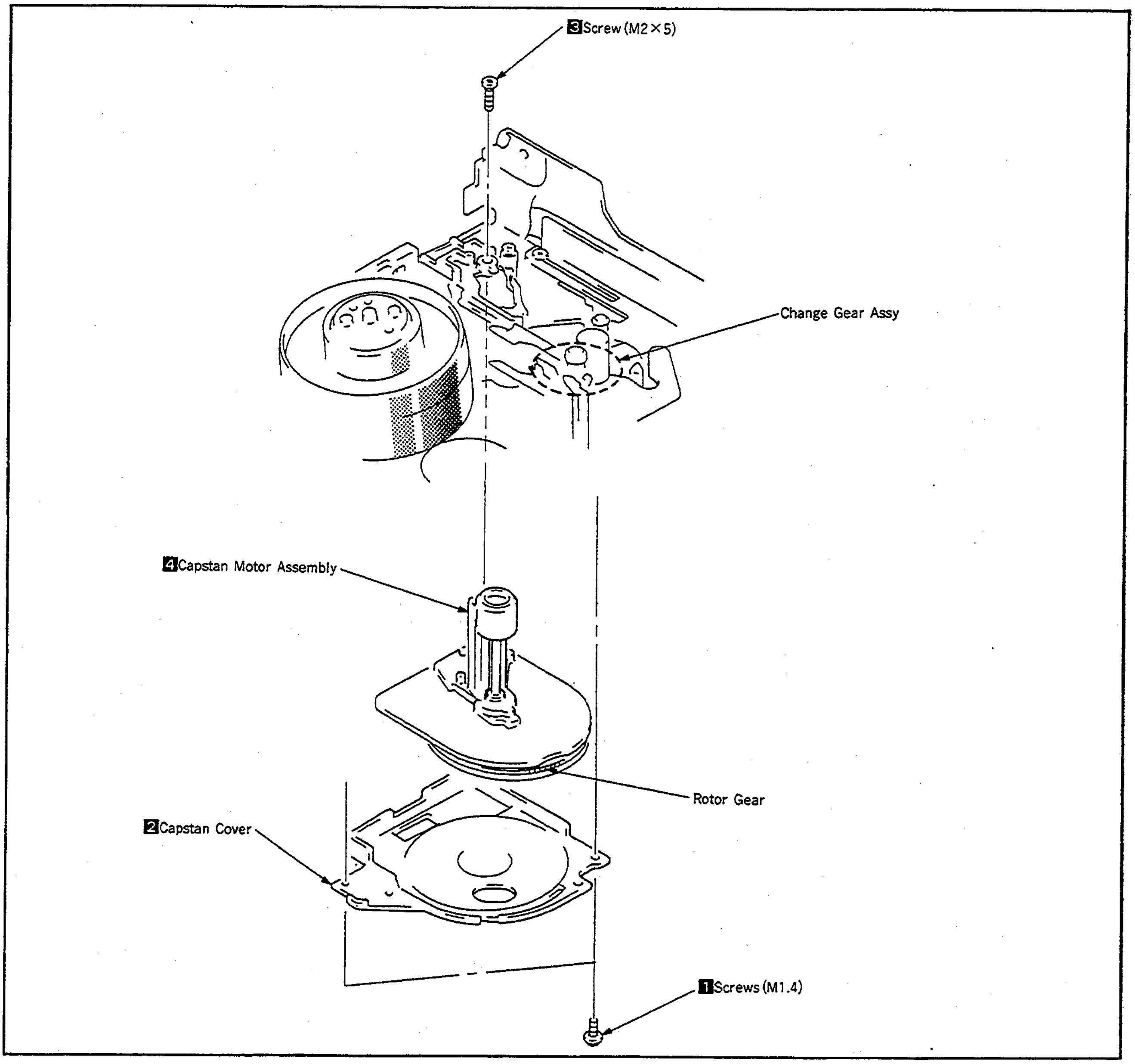

3 Screw (M2×5)
Change Gear Assy
4 Capstan Motor Assembly
Rotor Gear
2 Capstan Cover
1 Screws (M1.4)

Fig. 11

3-5. TAKE-UP REEL TABLE ASSEMBLY AND T- SOFT ASSEMBLY (Fig. 12)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
3) Remove the take-up reel table assembly 1.
4) Remove the T soft assembly 2, then the T soft arm 3.

2. Mounting

1) Mount the T soft arm 3 with its long hole ⓒ engaged with the boss ⓓ of LS chassis.
2) Mount the T soft assembly 2 with its tab ⓐ engaged with a square hole ⓑ of T soft arm, as shown in Fig. a.
3) Mount the take-up reel table assembly 1 and rotate it toward the arrow Ⓐ to be latched with T hard claw.
4) Referring to 3-1. mount the Retainer, Gooseneck assembly.
5) Referring to 1-1, mount the cassette compartment assembly.

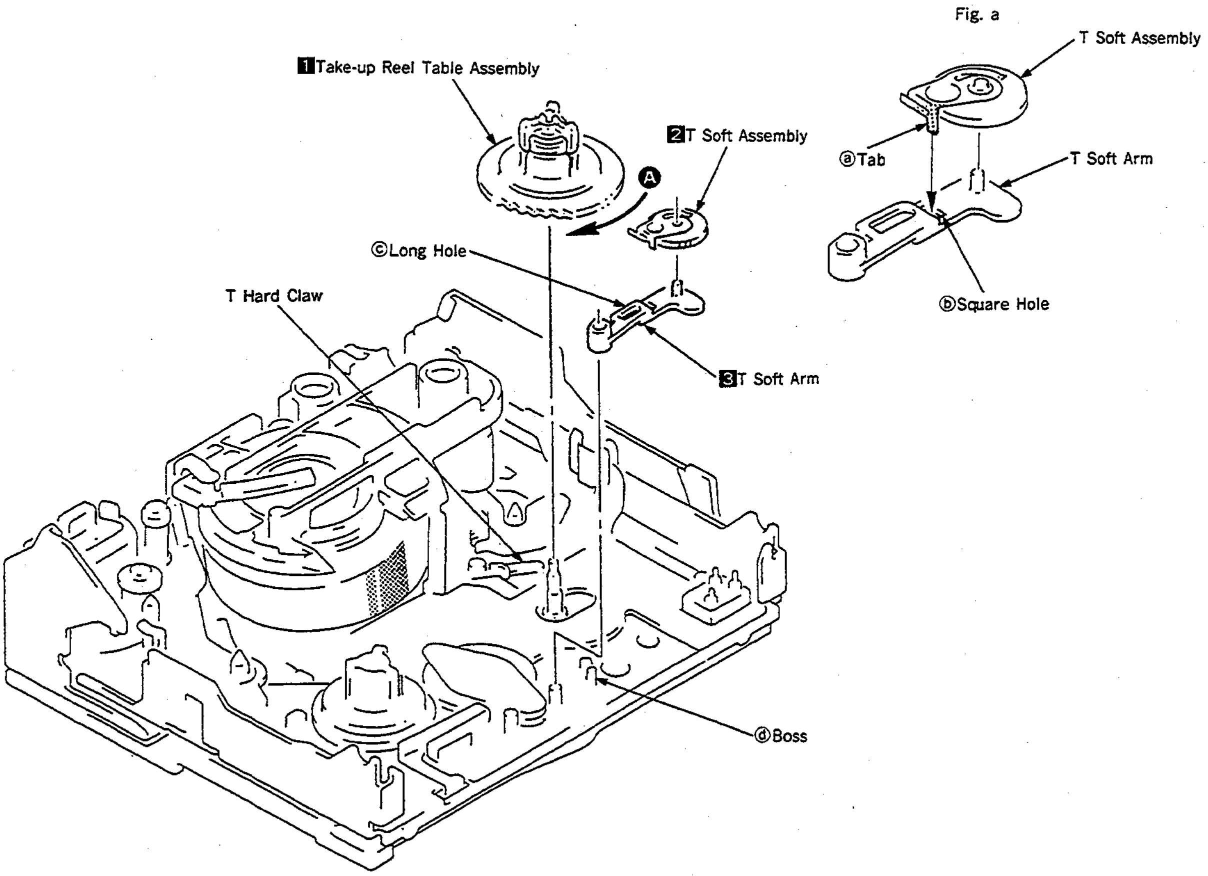


Fig. a
T Soft Assembly
ⓐTab
T Soft Arm
ⓑSquare Hole
1 Take-up Reel Table Assembly
2 T Soft Assembly
Ⓐ
ⓒLong Hole
T Hard Claw
3 T Soft Arm
ⓓBoss

Fig. 12

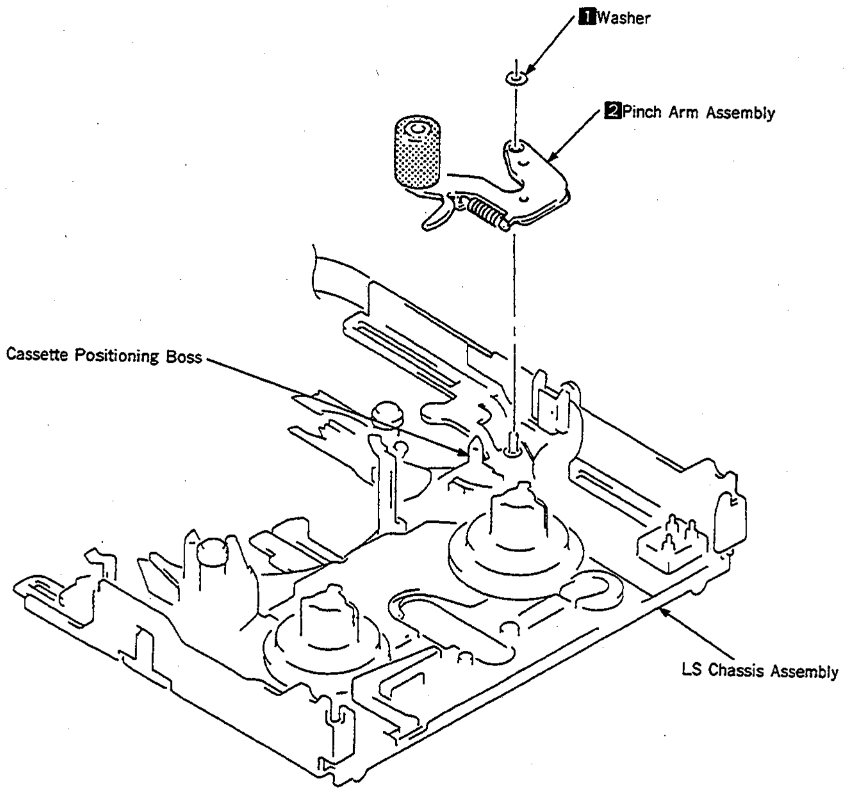
3-6. PINCH ARM ASSEMBLY (Fig. 13)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Select the [READY] mode.
3) Remove a washer ❶, then the pinch arm assembly ❷.

2. Mounting

1) Select the [READY] mode.
2) Hooking a spring of pinch arm assembly ❷ to the casse positioning boss on the chassis, mount the pinch arm assembly on the shaft of LS chassis assembly as shown in Fig. a.
3) Push in the spring with tweezers up to the root of boss as shown in Fig. b.
4) Mount the washer ❶.
5) Referring to 1-1, mount the cassette compartment assembly.


❶Washer
❷Pinch Arm Assembly
Cassette Positioning Boss
LS Chassis Assembly

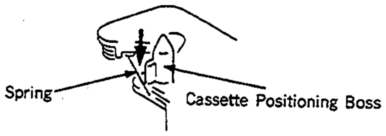

Spring
Cassette Positioning Boss

Fig. b

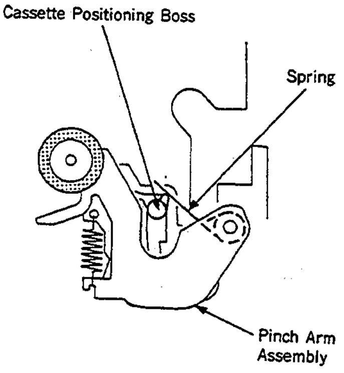

Cassette Positioning Boss
Spring
Pinch Arm Assembly

Fig. a

Fig. 13

3- . LS CHASSIS ASSEMBLY (Fig. 14)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
3) Referring to 3-2, remove the protector base assembly.
4) Remove a screw ❶, TG-5 base holder ❷, and LS flexible board ❸.
5) Remove a lock washer ❹, then the gooseneck as sembly ❺.
6) Remove four screws ❻, then the LS chassis assembly ❼.

2. Mounting

1) Select the $\boxed{\text{USE}}$ mode.
2) Confirm that the T hard claw and the outsert on the back of LS chassis are positioned as shown in Fig. a. (The T hard claw must be higher than corner ⓐ of chassis hole.) If not high, turn the outsert in the arrow direction while pushing the T hard claw from LS chassis to the chassis.
3) Sliding the GL slider, align the top edge of long hole ⓑ in GL slider with the edge face ⓒ of LS chassis hole as shown in Fig. b.
4) Mount the LS chassis assembly ❼ on the chassis.

Note : At this time, aligh a dowel ⓓ on LS chassis with a long hole ⓔ of No.7 guide on chassis, a long hole of GL slider with a GL arm pin, a groove of LS cam plate with an LS arm pin respectively as shown in Fig. c and d.

5) Tighten four screws ❻.
6) Mount the LS flexible board ❸ and TG-5 base holder ❷,then tighten the screw ❶.
7) Mount the Gooseneck assembly ❺ and fix it with a washer ❹.

Note : Using the mode selector, confirm that loading and unloading are performed smoothly.

8) Referring to 3-2, mount the protector base assembly.
9) Referring to 3-1, mount the Retainer, Gooseneck assembly.
10) Referring to 1-1, mount the cassette compartment assembly.

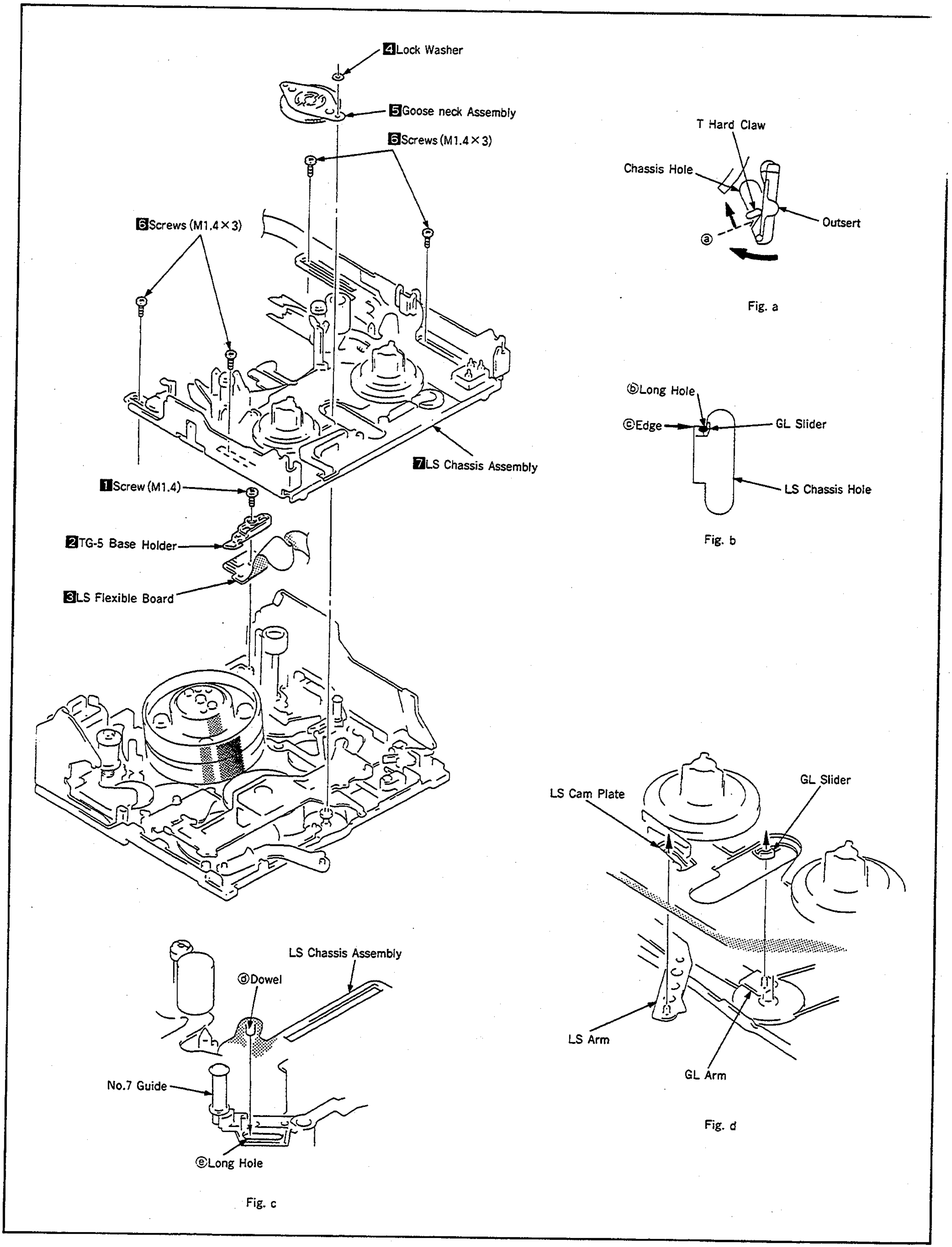

4 Lock Washer
5 Goose neck Assembly
6 Screws (M1.4×3)
6 Screws (M1.4×3)
7 LS Chassis Assembly
1 Screw (M1.4)
2 TG-5 Base Holder
3 LS Flexible Board
T Hard Claw
Chassis Hole
Outsert
ⓐ
ⓑLong Hole
ⓒEdge
GL Slider
LS Chassis Hole
LS Chassis Assembly
ⓓDowel
No.7 Guide
ⓔLong Hole
LS Cam Plate
GL Slider
LS Arm
GL Arm

Fig. a

Fig. b

Fig. c

Fig. d

Fig. 14

3-[illegible] GUIDE BASE T ASSEMBLY AND GUIDE BASE S ASSEMBLY (Fig. 15, 16)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Referring to 3-1, remove the Retainer Gooseneck assembly.
3) Referring to 3-2, remove the protector base assembly.
4) Referring to 3-7, remove the LS chassis assembly.
5) Push in the GL slider 1 toward the arrow Ⓐ, and remove the guide base T assembly 2 and guide base S assembly 3 from the guide rail respectively as shown in Fig. 15.

Note : Do not invert the LS chassis up side down, otherwise the T reel table assembly, T soft arm and T sofr assembly will drop. Also, take care not to allow the S reel table to float up, or the tension regulator string bends. (Refer to 3-5 T Reel Table Assembly and T Soft Assembly, and 3-10 S Reel Table Assembly and TG-1 Arm Assembly.)

6) Turning the guide base T assembly 2 and guide base S assembly 3 respectively, align the shaft to hole to remove as shown in Fig. a.

2. Mounting

1) Turning the guide base T assembly 2 and guide base S assembly 3 respectively, align the shaft with a hole to mount as shown in Fig. a (Fig. 15).
2) On the back side of chassis, insert the guide arm T assembly 4, guide arm S assembly 5 and GL slider 1 from position shown in Fig.b to position shown in Fig. c. Also, aligning the guide base T assembly 2 and guide base S assembly 3 with the respective guide rails, push in the GL slider 1 toward the arrow Ⓑ as shown in Fig. 16.

Note : Do not invert the LS chassis up side down, otherwise the T reel table assembly, T soft arm and T soft assembly will drop. Also, take care not to allow the S reel table to float up, or the tension regulator string bends. (Refer to 3-5 T Reel Table Assembly and T Soft Assembly, and 3-10 S Reel Table Assembly and TG-1 Arm Assembly.)

3) Referring to 3-7, mount the LS chassis assembly.
4) Referring to 3-2, mount the protector base assembly.
5) Referring to 3-1, mount the Retainer, Gooseneck assembly.

Note : At this time, confirm that the T soft assembly is surely engaged with the T soft arm.

6) Referring to 1-1, mount the cassette compartment assembly.

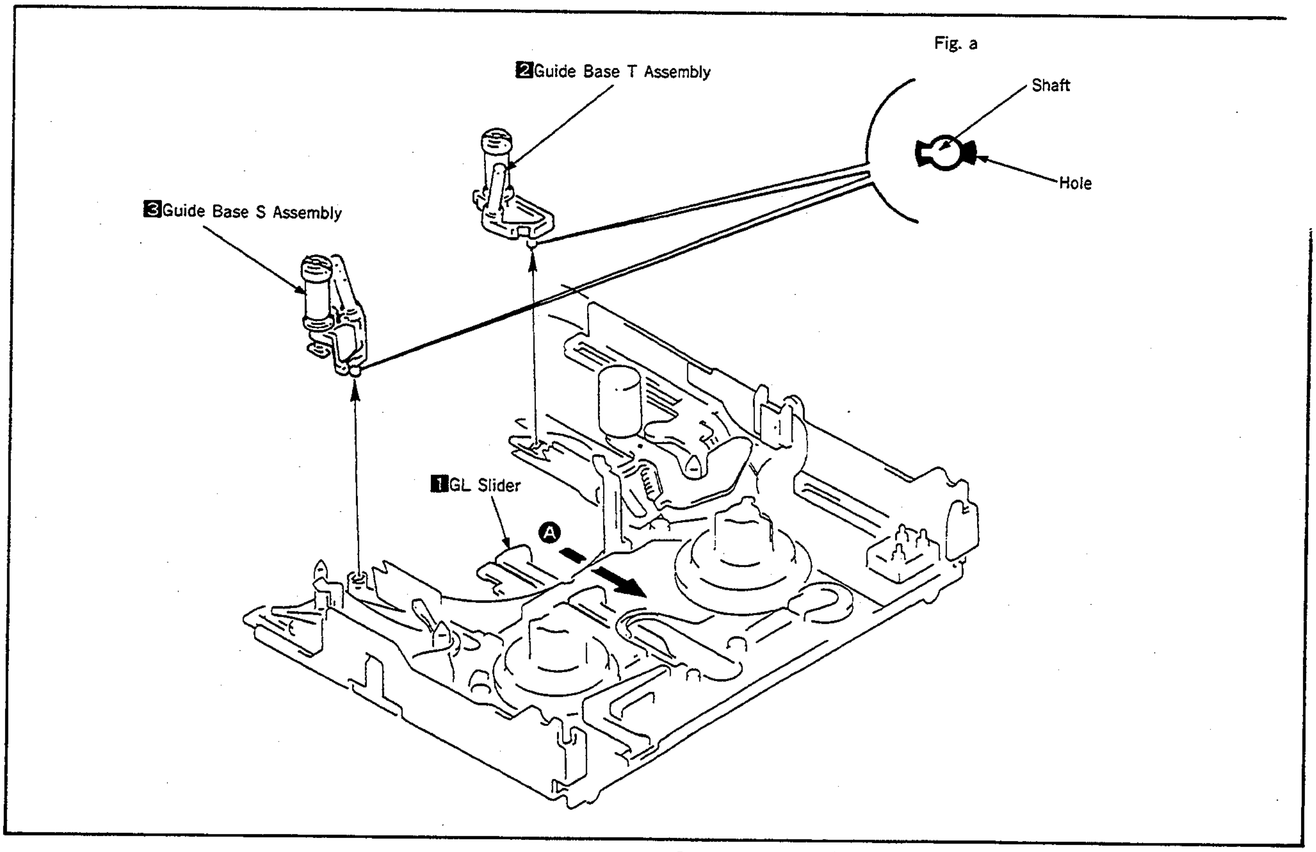


Fig. a
2 Guide Base T Assembly
Shaft
Hole
3 Guide Base S Assembly
1 GL Slider
Ⓐ

Fig. 15

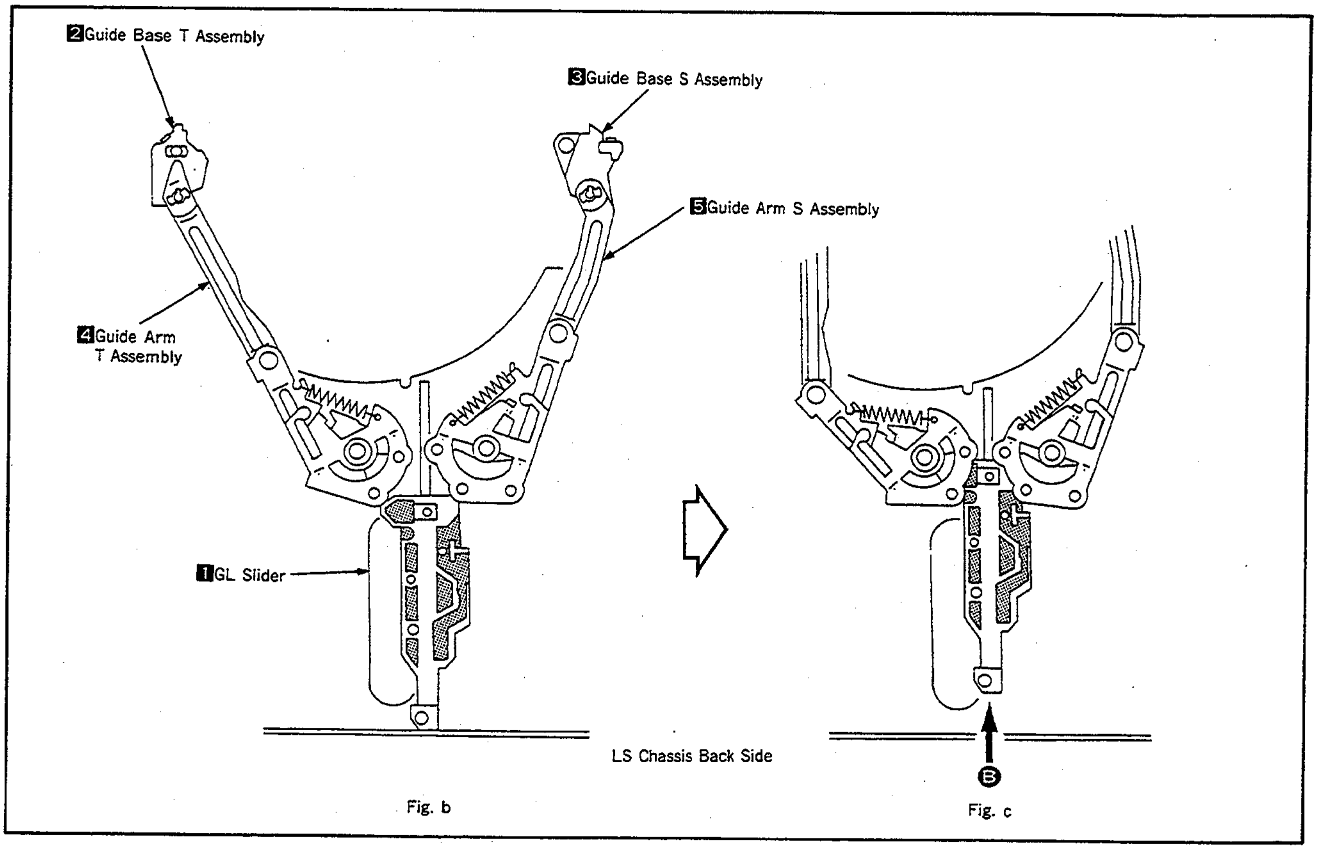

2 Guide Base T Assembly
3 Guide Base S Assembly
5 Guide Arm S Assembly
4 Guide Arm T Assembly
1 GL Slider
LS Chassis Back Side
Ⓑ

Fig. b

Fig. c

Fig. 16

3- GUIDE ARM T ASSEMBLY AND GUIDE ARM S ASSEMBLY (Fig. 17)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
3) Referring to 3-2, remove the protector base assembly.
4) Referring to 3-7, remove the LS chassis assembly.
5) Referring to 3-8, remove the guide base T assembly and guide base S assembly.
6) Remove lock washers ❶, then the guide arm T assembly ❷ and guide arm S assembly ❸ respectively from the back side of chassis.

Note : Do not invert the LS chassis up side down, otherwise the T reel table assembly, T soft arm and T soft assembly will drop. Also, take care not to allow the S reel table to float up, or the tension regulator string bends. (Refer to 3-5 T Reel Table Assembly and T Soft Assmbly, and 3-10 S Reel Table Assembly and TG-1 Arm Assembly.)

2. Mounting

1) Mount the guide arm T assembly ❷ and guide arm S assembly ❸, then fix them with a lock washer ❶ respectively.

Note : Do not invert the LS chassis up side down, otherwise the T reel table assembly, T soft arm and T soft assembly will drop. Also, take care not to allow the S reel table to float up, or the tension regulator string bends. (Refer to 3-5 T Reel Table Assembly and T Soft Assembly, and 3-10 S Reel Table Assembly and TG-1 Arm Assembly.)

2) Referring to 3-8, mount the guide base T assembly, guide-base S assembly and GL slider.
3) Referring to 3-7, mount the LS chassis assembly.
4) Referring to 3-2, mount the protector base assembly.
5) Referring to 3-1, mount the Retainer, Gooseneck assembly.
6) Referring to 1-1, mount the cassette compartment assembly.

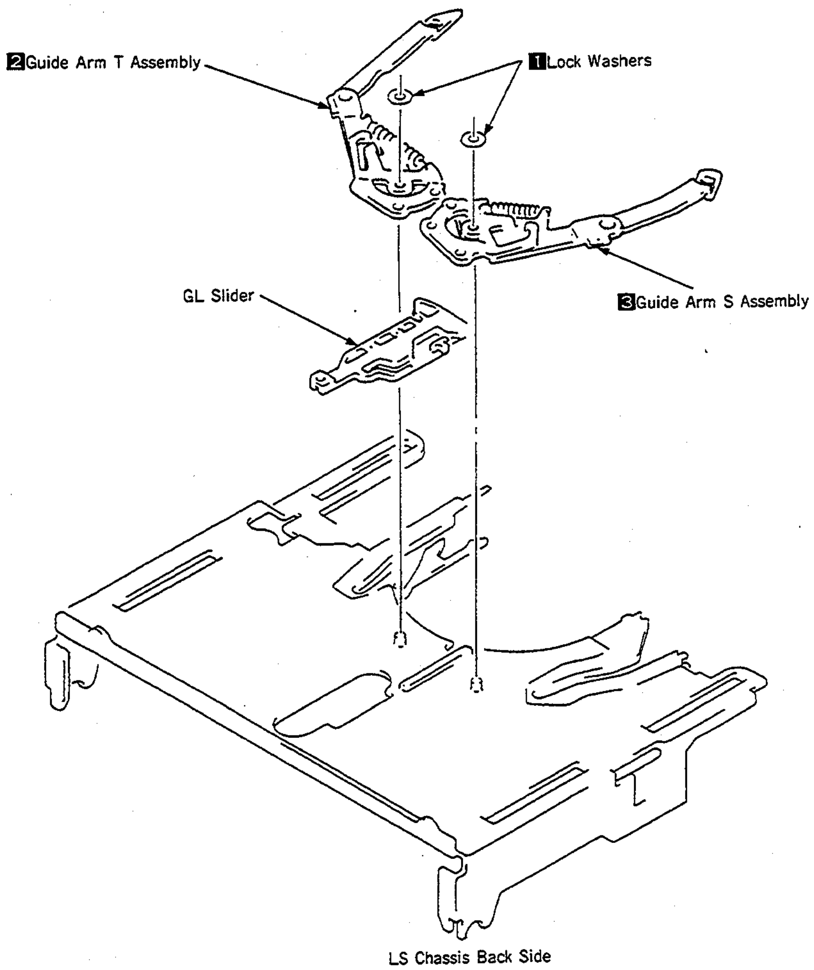


Fig. 17

3-10. SUPPLY REEL TABLE ASSEMBLY AND TG-1 ARM ASSEMBLY (Fig. 18)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
3) Referring to 3-2, remove the protector base assembly.
4) Referring to 3-7, remove the LS chassis assembly.
5) Referring to 3-8, remove the guide base S assembly.
6) Remove a screw 1, then the string 2 from the supply reel table assembly 3. For easy removal of string block 4, insert a flat-blade screwdriver into a groove ⓐ and push it up (Fig. a).
7) Remove the supply reel table assembly 3.
8) Remove a tension coil spring 5.
9) Turn the TG-1 arm assembly 6 up to a portion ⓒ of LS chassis hole in the arrow Ⓐ direction so that its tab ⓑ can be disengaged (Fig. b).

2. Mounting

1) Pushing the S soft brake 7 toward the arrow Ⓑ, mount thesupply reel table assembly 3.
2) Route the string 2 under the TG-1 arm asembly 6, andinsert the tab ⓑ of TG-1 arm assembly into the LS chassis hole ⓒ, then turn the TG-1 arm assembly in the reverse direction of arow Ⓐ (Fig. b).
3) Wind the string 2 along the groove of supply reel t assembly 3 (Fig. a).

Note : Do not curl the string extremely. Also, avoid adhesion [illegible] oil, otherwise the image will be distorted.

4) Using the FWD B.T. adjusting driver (Ref. No. J-15), shift the string block 4 toward the arrow Ⓒ and tighten the screw 1 (Fig. a).
5) Engage the tension coil spring 5 to the chassis hook.

Note : Confirm that the string 2 is surely wound around the groove of supply reel table assembly 3 (Fig.a).

6) Referring to 3-8, mount the guide base S assembly.
7) Referring to 3-7, mount the LS chassis assembly.
8) Referring to 3-2, mount the protector base assembly.
9) Referring to 3-1, mount the Retainer, Gooseneck assembly.

Note : At this time, confirm that the T soft assembly is surely engaged with the T soft arm. (Refer to 3-5 Take-up Reel Table Assembly and Take-up Soft Assembly.)

10) Referring to 1-1, mount the cassette compartment assembly.

Note : Referring to 3-22, adjust the tension regulator position.

Note : Referring to 3-23, adjust the forward back tension.

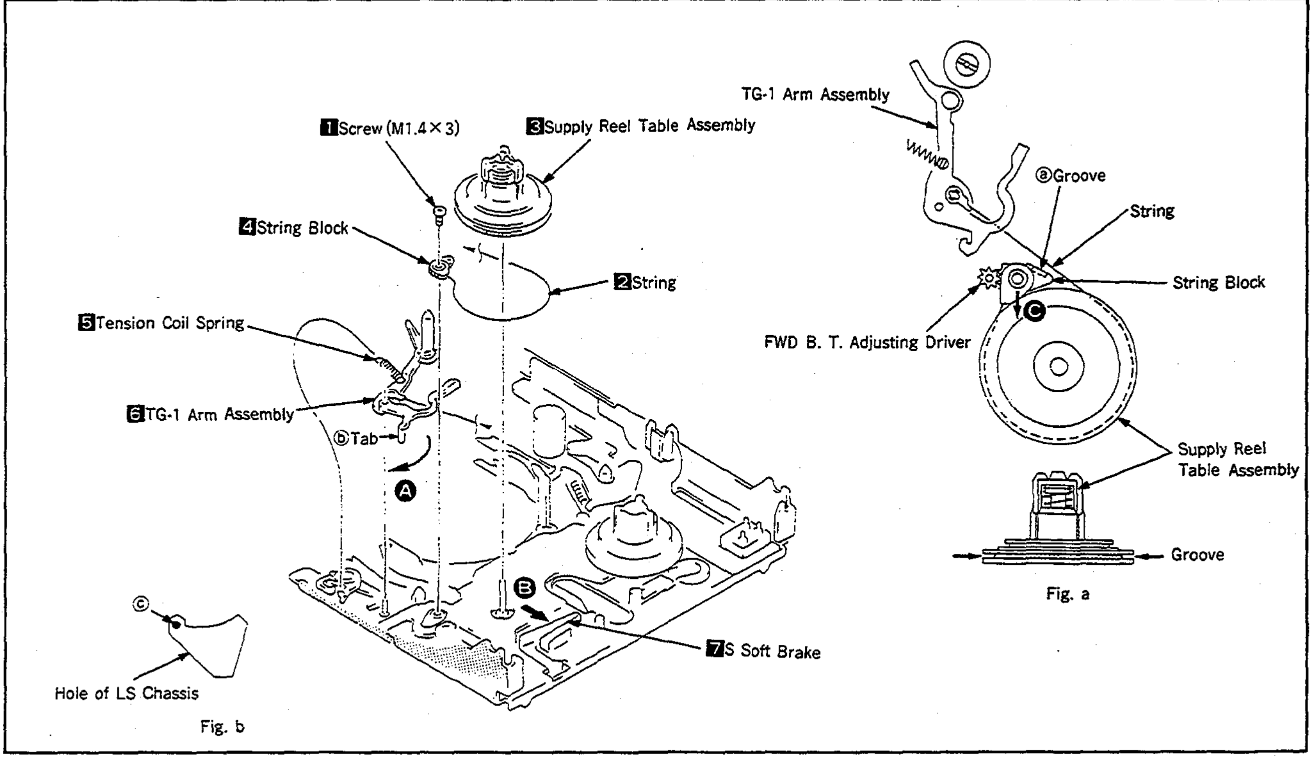

1 Screw (M1.4×3)
3 Supply Reel Table Assembly
4 String Block
2 String
5 Tension Coil Spring
6 TG-1 Arm Assembly
ⓑ Tab
Ⓐ
Ⓑ
7 S Soft Brake
ⓒ
Hole of LS Chassis
Fig. b
TG-1 Arm Assembly
ⓐ Groove
String
String Block
Ⓒ
FWD B. T. Adjusting Driver
Supply Reel Table Assembly
Groove
Fig. a

Fig. 18

3 . TG-2 ROLLER ASSEMBLY (Fig. 19)

1. Removal

1) Remove the TG-2 roller assembly 1 .
2) Remove a compression coil spring 2 .

2. Mounting

1) Insert a compression coil spring 2 into the boss on chassis.
2) Rotate gently the TG-2 roller assembly 1 until the screw is engaged.

3. Presetting of TG-2 Roller Height (Fig. a)

1) Rotating the TG-2 upper flange, adjust the height of bottom face of TG-2 lower flange from the top face of dowel on the mechanical chassis to 3. 3 ± 0. 05mm.

Note : After adjustment, perform 4. TAPE PATH ADJUSTMENT.

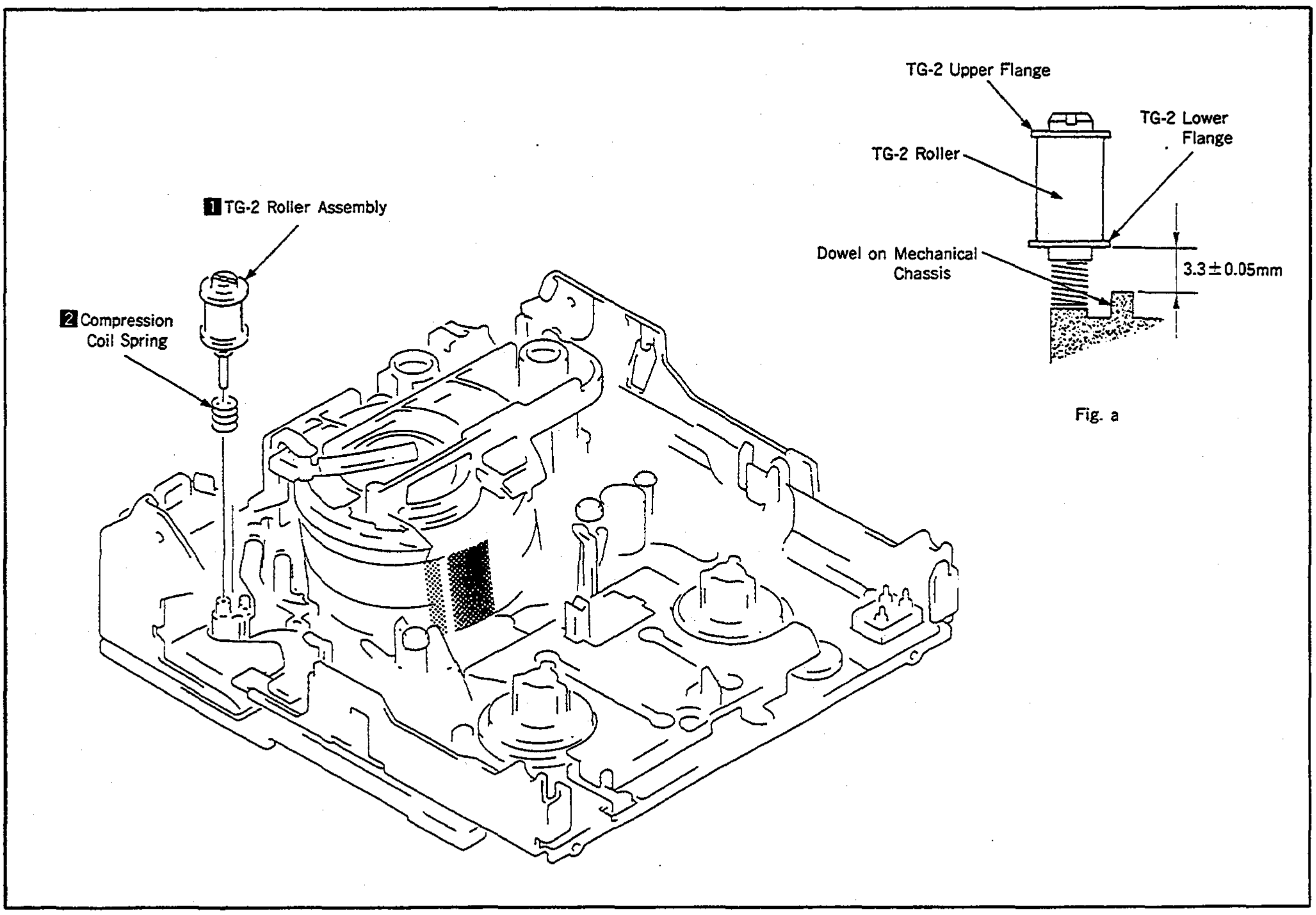

1 TG-2 Roller Assembly
2 Compression Coil Spring
TG-2 Upper Flange
TG-2 Lower Flange
TG-2 Roller
Dowel on Mechanical Chassis
3.3±0.05mm
Fig. a

Fig. 19

3-12. TG-7 ARM ASSEMBLY (Fig. 20)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
3) Referring to 3-2, remove the protector base assembly.
4) Referring to 3-7, remove the LS chassis assembly.
5) Raise a portion ⓐ of TG-7 arm Leaf spring ❶ in arrow direction with a flat-blade screwdriver or tweezers to disengage the tab from the chassis, then remove the TG-7 arm Leaf spring as shown in Fig. a.
6) Remove the TG-7 assembly ❷ from the shaft of mechanical-chassis.

2. Mounting

1) Mount the TG-7 arm assembly ❷ to the shaft of mechanic chassis.
2) Mount the TG-7 arm Leaf spring ❶ to the mechanicalchasis.
   * Push in the tab of Leaf spring until it clicks into a detent ofchassis (Fig. a).
3) Referring to 3-7, mount the LS chassis assembly.
4) Referring to 3-2, mount the protector base assembly.
5) Referring to 3-1, mount the Retainer, Gooseneck assembly.
6) Referring to 1-1, mount the cassette compartmnet assembly.

Note : After mounting, perform 4. TAPE PATH ADJUSTMENT.

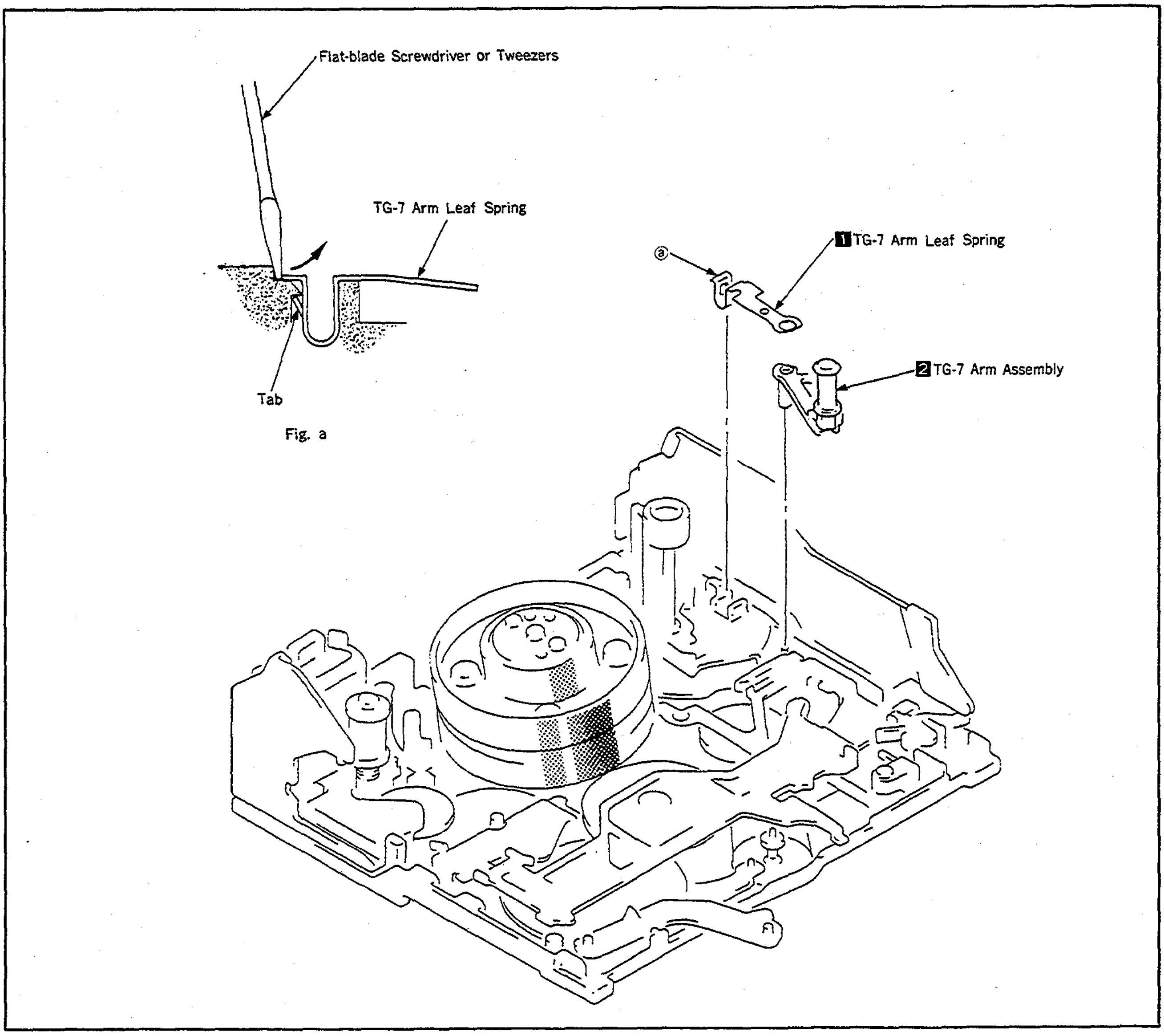


Fig. 20

3 . LM MOTOR ASSEMBLY (Fig. 21)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
3) Referring to 3-2, remove the protector base assembly.
4) Referring to 3-7, remove the LS chassis assembly.
5) Select the LOAD mode (at the position where the FF arm assembly is not above the screw ❶).
6) Remove two screws ❶, then the LM motor assembly ❷.

2. Mounting

1) Aligning the dowel ⓐ of LM motor assembly ❷ with the hole ⓑ of mechanical chassis, mount the LM motor assembly with its hole ⓒ inserted into the mechanical chassis shaft ⓓ.
2) Tighten two screws ❶.
3) Referring to 3-7, mount the LS chassis assembly.
4) Referring to 3-2, mount the protector base assembly.
5) Referring to 3-1, mount the Retainer, Gooseneck assembly.
6) Referring to 1-1, mount the cassette compartment assembly.

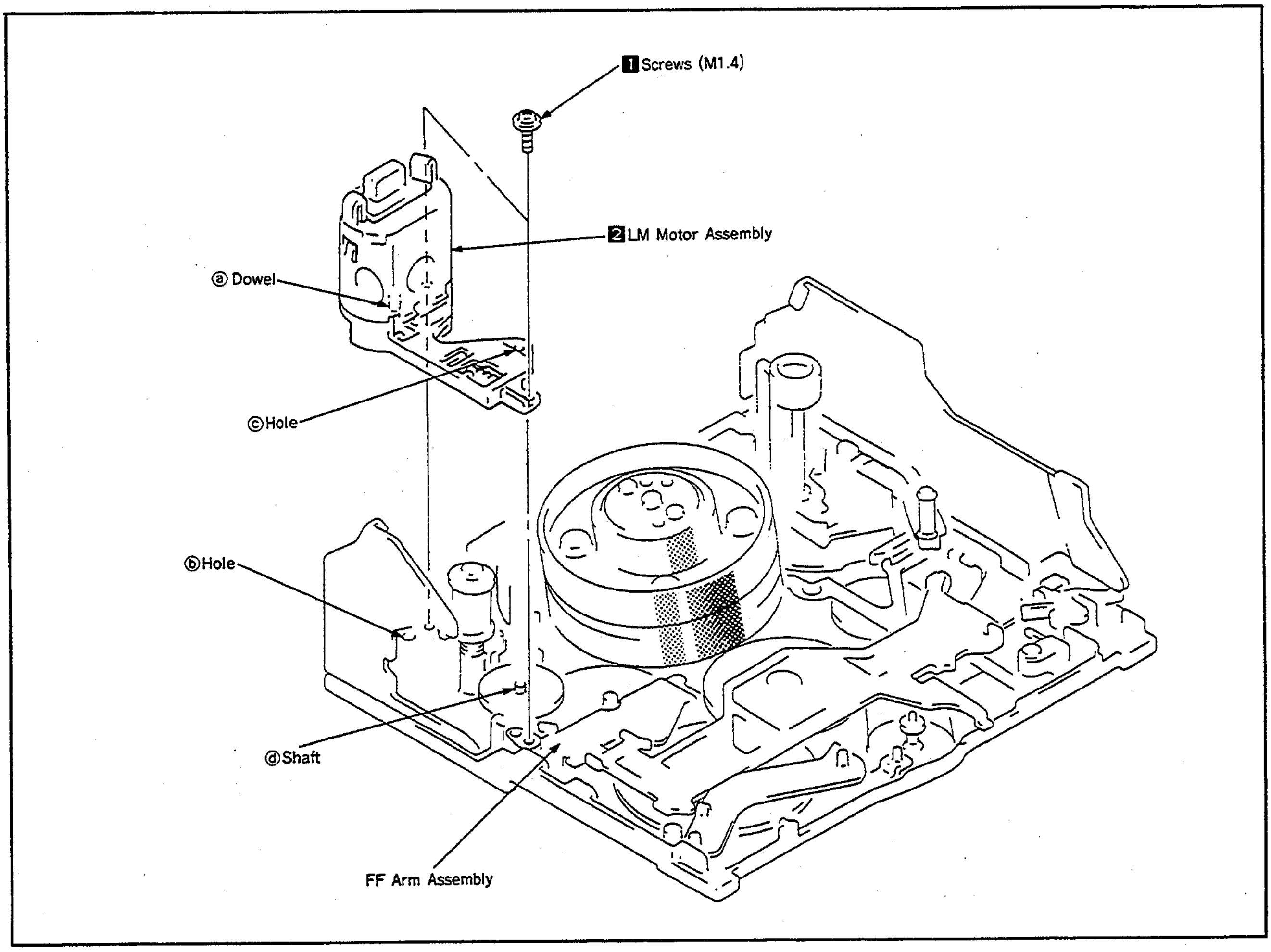


Fig. 21

3-14. LS ARM (Fig. 22)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
3) Referring to 3-2, remove the proctector base assembly.
4) Referring to 3-7, remove the LS chassis assembly.
5) Remove the LS arm 1 from the shaft of mechanical chassis.

Note : Take care not to drop the LS roller 2.

2. Mounting

1) Mount the LS arm 1 meeting with mechanical chassis sh and cam groove.

Note : Move the LS arm 1 in arrow direction to confirm that the LS roller 2 is surely inserted.

2) Referring to 3-7, mount the LS chassis assembly.
3) Referring to 3-2, mount the protector base assembly.
4) Referring to 3-1, mount the Retainer, Gooseneck assembly.
5) Referring to 1-1, mount the cassette compartment assembly.

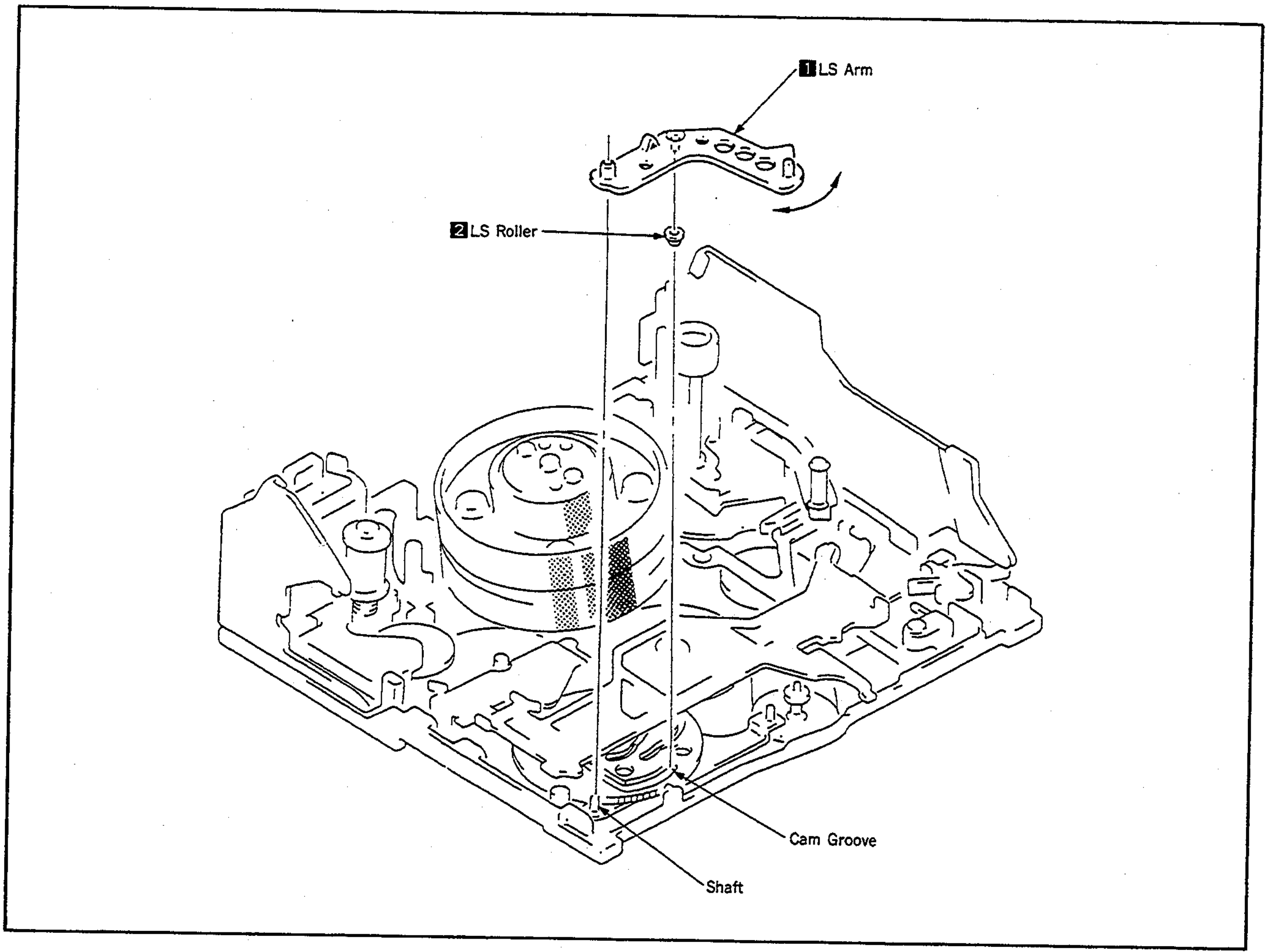


Fig. 22

. M SLIDER ASSEMBLY (Fig. 23)

Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
3) Referring to 3-2, remove the protector base assembly.
4) Referring to 3-7, remove the LS chassis assembly.
5) Remove two screws ❶, then the gear holder ❷.
6) Remove two lock washers ❸, then the M slider assembly ❹.

2. Mounting

1) Mount the M slider assembly ❹, aligning long holes ⓐ and ⓑ of M slider assembly with shafts ⓒ and ⓓ of mechanical chassis, and a long hole ⓔ with shaft ⓕ of press arm assembly, and also shaft ⓖ with outer groove ⓗ of cam respectively.
2) Mount two lock washers ❸.
3) Mount the gear holder ❷ with its outserts ⓘ and ⓙ inserted into holes in the mechanical chassis.
4) Tighten two screws ❶.
5) Referring to 3-7, mount the LS chassis assembly.
6) Referring to 3-2, mount the protector base assembly.
7) Referring to 3-1, mount the Retainer, Gooseneck assembly.
8) Referring to 1-1, mount the cassette compartment assembly.

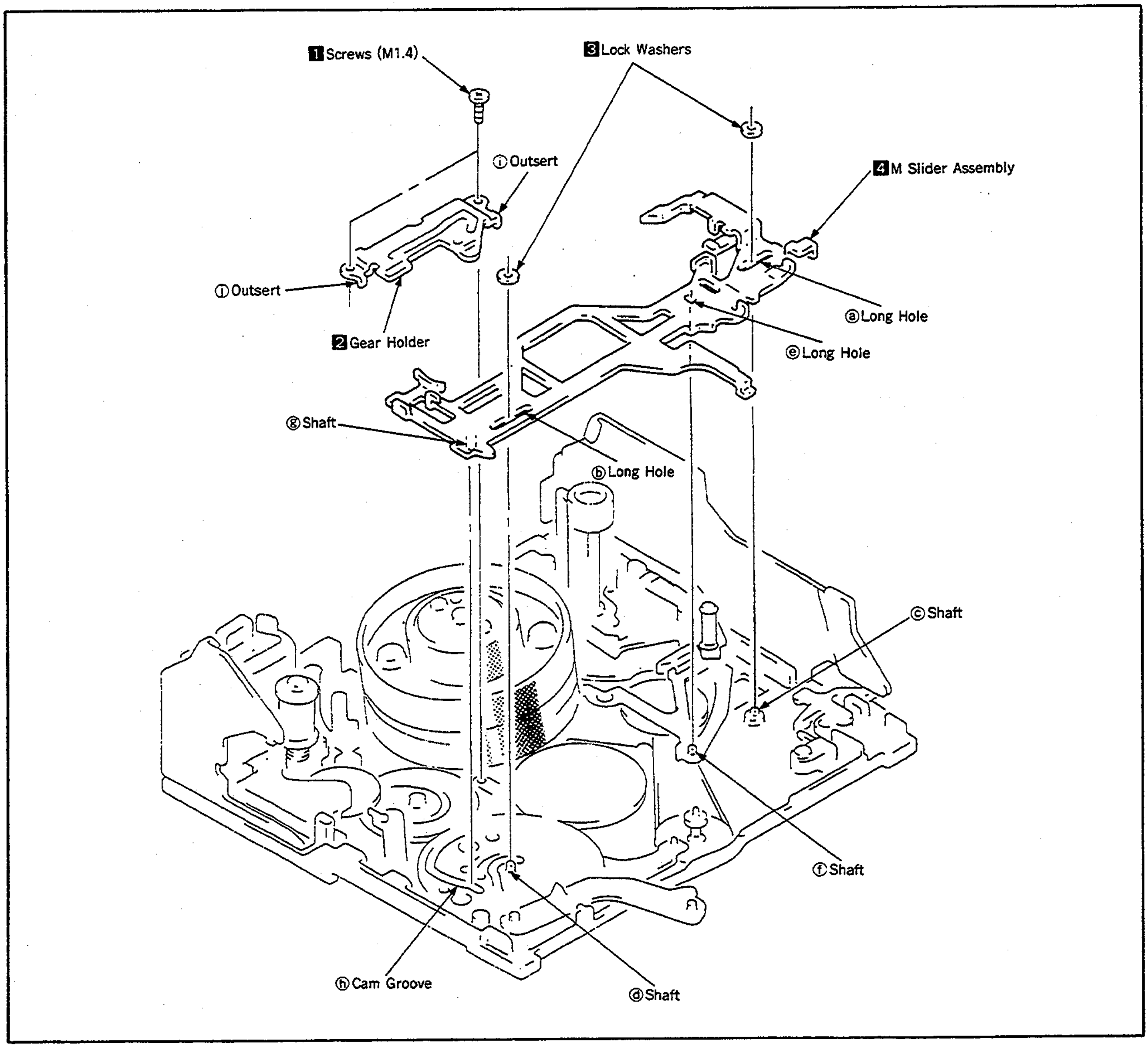

❶Screws (M1.4)
❸Lock Washers
ⓙOutsert
❹M Slider Assembly
ⓘOutsert
ⓐLong Hole
❷Gear Holder
ⓔLong Hole
ⓖShaft
ⓑLong Hole
ⓒShaft
ⓕShaft
ⓗCam Groove
ⓓShaft

Fig. 23

3-16. PINCH PRESS ARM ASSEMBLY (Fig. 24)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
3) Referring to 3-2, remove the protector base assembly.
4) Referring to 3-3, remove the drum assembly.
5) Referring to 3-7, remove the LS chassis assemvly.
6) Referring to 3-15, remove the M slider assembly.
7) Remove a lock washer ❶, then pinch press arm assembly ❷.

2.Mounting

1) Mount the pinch press arm assembly ❷, inserting its sh ⓐ into the cam groove ⓑ of HC drive arm, and hole ⓒ in the shaft ⓓ of mechanical chassis.
2) Mount the lock washer ❶.
3) After mounting, shift the pinch press arm assembly toward the arrow direction.
4) Referring to 3-15, mount the M slider assembly.
5) Referring to 3-7, mount the LS chassis assembly.
6) Referring to 3-3, mount the drum assembly.
7) Referring to 3-2, mount the protector base assembly.
8) Referring to 3-1, mount the Retainer, Gooseneck assembly.
9) Referring to 1-1, mount the cassette compartment assembly.

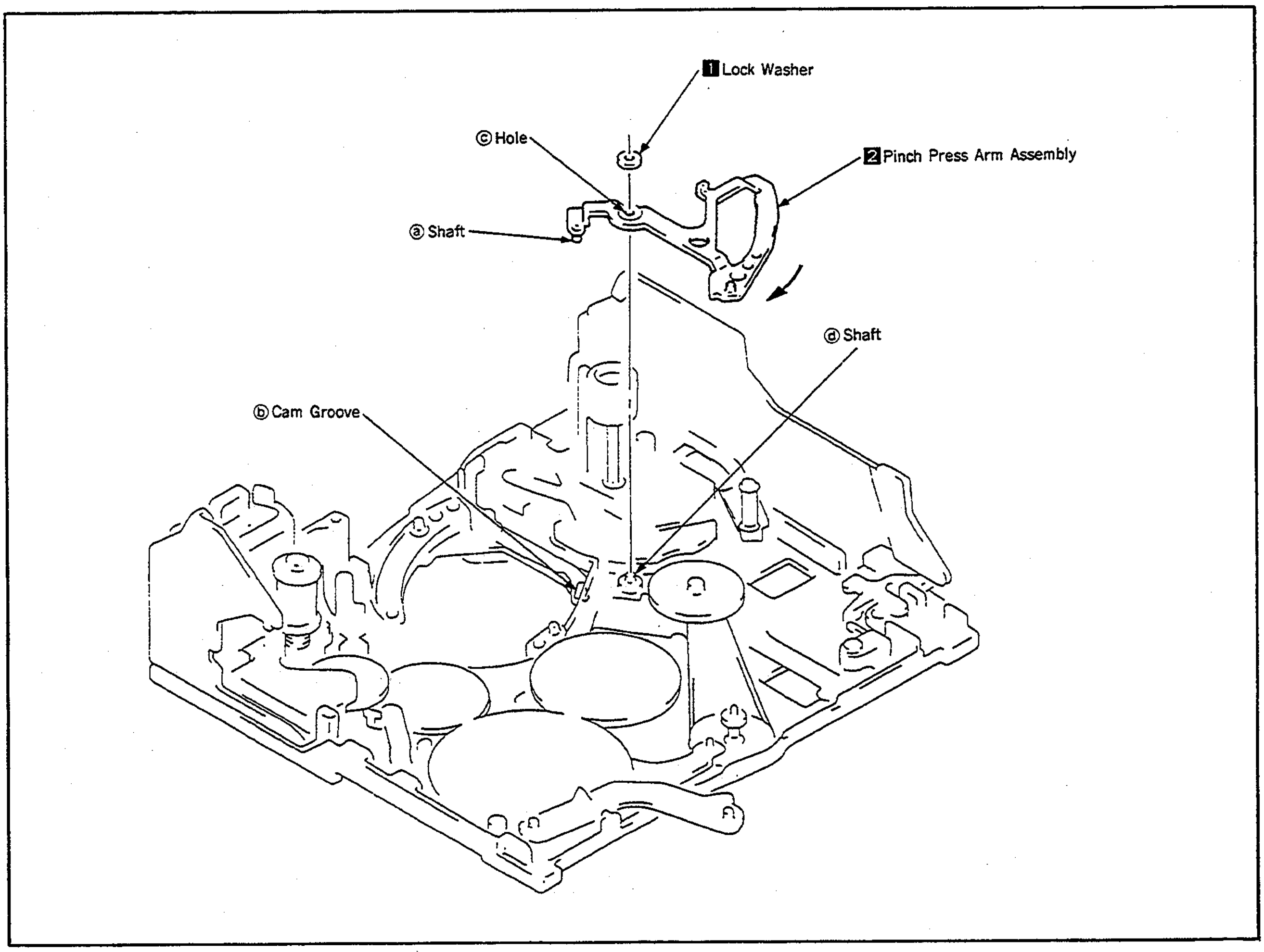


Fig. 24

7. CAM (Fig. 25)

Removal

Referring to 1-1, remove the cassette compartment assembly.
2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
3) Referring to 3-2, remove the protector base assembly.
4) Referring to 3-7, remove the LS chassis assembly.
5) Referring to 3-14, remove the LS arm assembly.
6) Referring to 3-15, remove the M slider assembly.
7) Remove the cam **1**.

2. Mounting

1) Referring to 3-13, remove the LM motor assembly.

Note : Take care not to allow grease of LM motor assembly to stick to the TG-2 roller assembly.

2) Mount the cam **1**, aligning its center hole with shaft of mechanical chassis, and the cam groove with the shaft of GL arm assembly. At this time , make sure that the ▲ mark on L gear B is aligned with that on the cam and also a recess is aligned with the phase aligning hole respectively as shown in Fig. a.

Note : Apply grease to the cam groove if it scarecely remains.

3) Mount the LM motor assembly.
4) Referring to 3-15, mount the M slider assembly.
5) Referring to 3-14, mount the LS arm assembly.
6) Referring to 3-7, mount the LS chassis assembly.
7) Referring to 3-2, mount the protector base assembly.
8) Referring to 3-1, mount the Retainer, Gooseneck assembly.
9) Referring to 1-1, mount the cassette compartment assembly.

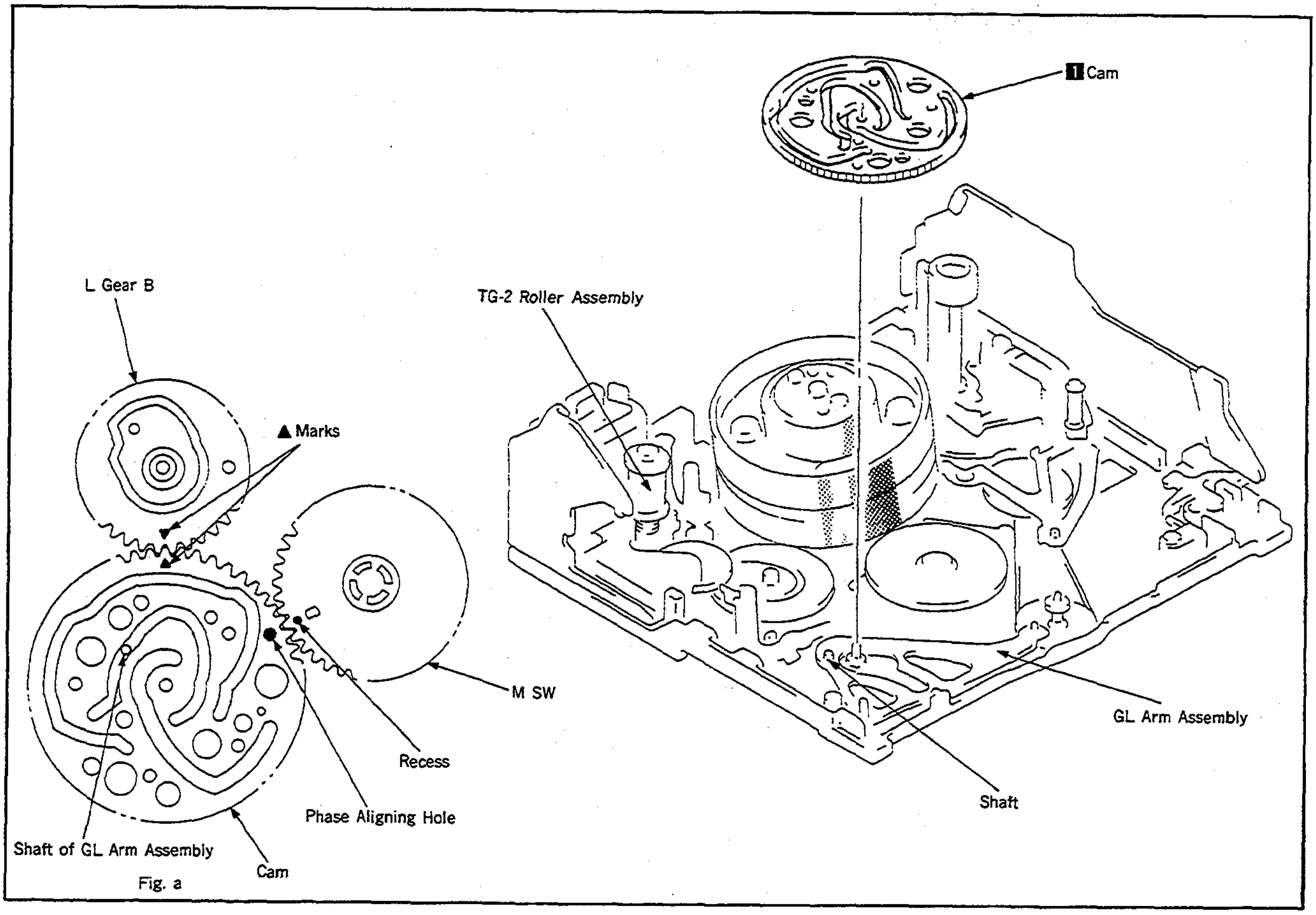


Fig. a

Fig. 25

3-18. GL ARM ASSEMBLY (Fig. 26)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
3) Referring to 3-2, remove the protector base assembly.
4) Referring to 3-7, remove the LS chassis assembly.
5) Referring to 3-14, remove the LS arm assembly.
6) Referring to 3-15, remove the M slider assembly.
7) Referring to 3-17, remove the cam.
8) Remove the GL arm assembly ❶.

2. Mounting

1) Mount the GL arm assembly ❶ with its hole ⓐ inserted in the shaft ⓑ of mechanical chassis.
2) Referring to 3-17, mount the cam.
3) Referring to 3-15, mount the M slider assembly.
4) Referring to 3-14, mount the LS arm assembly.
5) Referring to 3-7, mount the LS chassis assembly.
6) Referring to 3-2, mount the protector base assembly.
7) Referring to 3-1, mount the Retainer, Gooseneck assembly.
8) Referring to 1-1, mount the cassette compartment assembly.

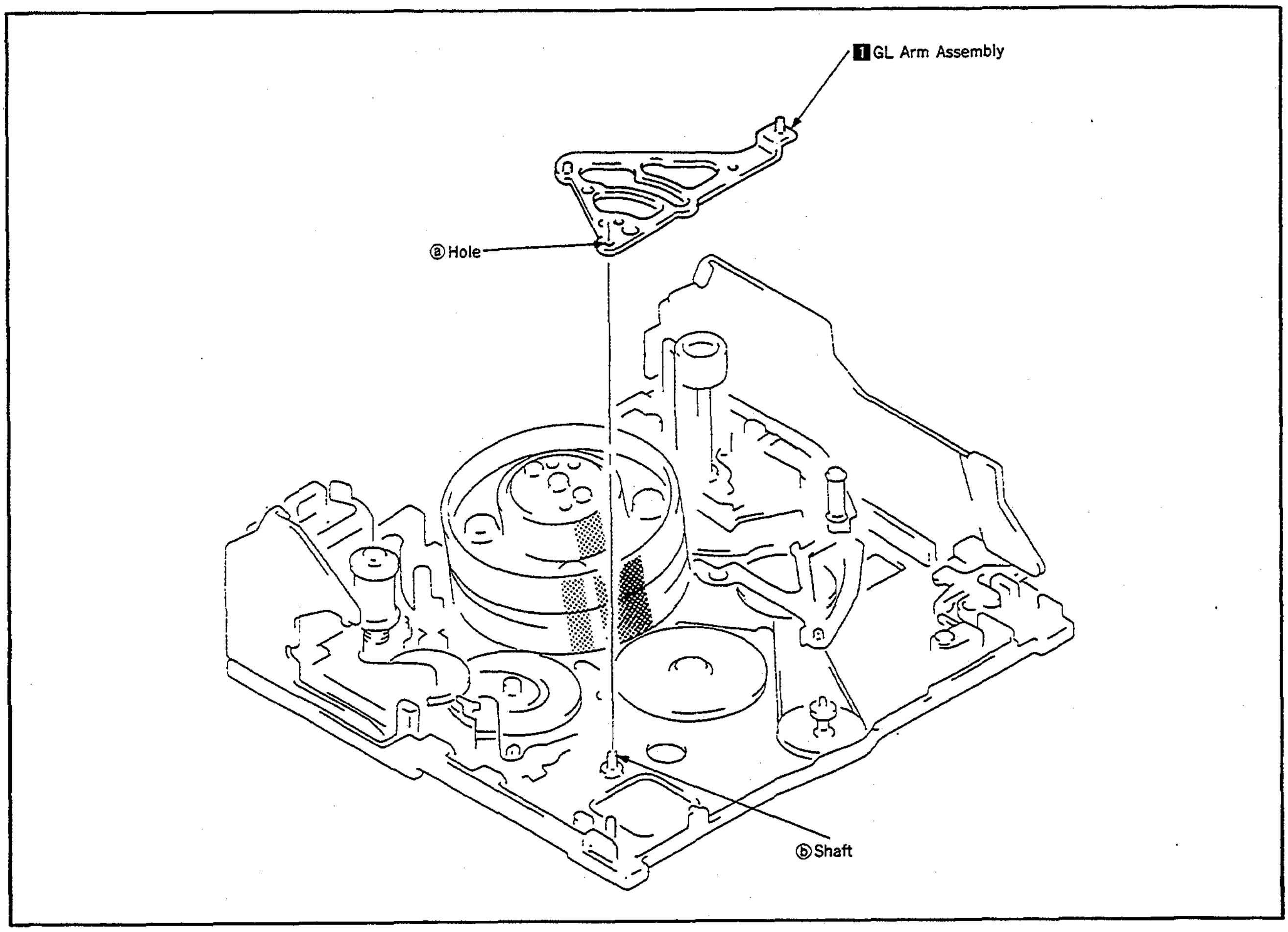


Fig. 26

9. L GEAR A AND L GEAR B (Fig. 27)

Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
3) Referring to 3-2, remove the protector base assembly.
4) Referring to 3-7, remove the LS chassis assembly.
5) Referring to 3-14, remove the LS arm assembly.
6) Referring to 3-15, remove the M slider assembly.
7) Referring to 3-17, remove the cam.
8) Referring to 3-13, remove the LM motor assembly.
9) Remove the FF arm assembly ❶.
10) Remove the L gear A ❷.
11) Remove the L gear B ❸.

2. Mounting

1) Insert the L gear B ❸ into the shaft of mechanical chassis. (At this time, the phase aligning mark ▲ should be faced toward the cam mounting shaft ⓐ.)
2) Insert the L gear A ❷ into the shaft of mechanical chassis.
3) Mount the FF arm assembly ❶ with its two shafts inserted into the cam groove of L gear B ❸ and the hole of mechanical chassis.
4) Referring to 3-17, mount the cam.
5) Referring to 3-13, mount the LM motor assembly.
6) Referring to 3-15, mount the M sleder assembly.
7) Referring to 3-14, mount the LS arm assembly.
8) Referring to 3-7, mount the LS chassis assembly.
9) Referring to 3-2, mount the protector base assembly.
10) Referring to 3-1, mount the Retainer, Gooseneck assembly.
11) Referring to 1-1, mount the cassette compartment assembly.

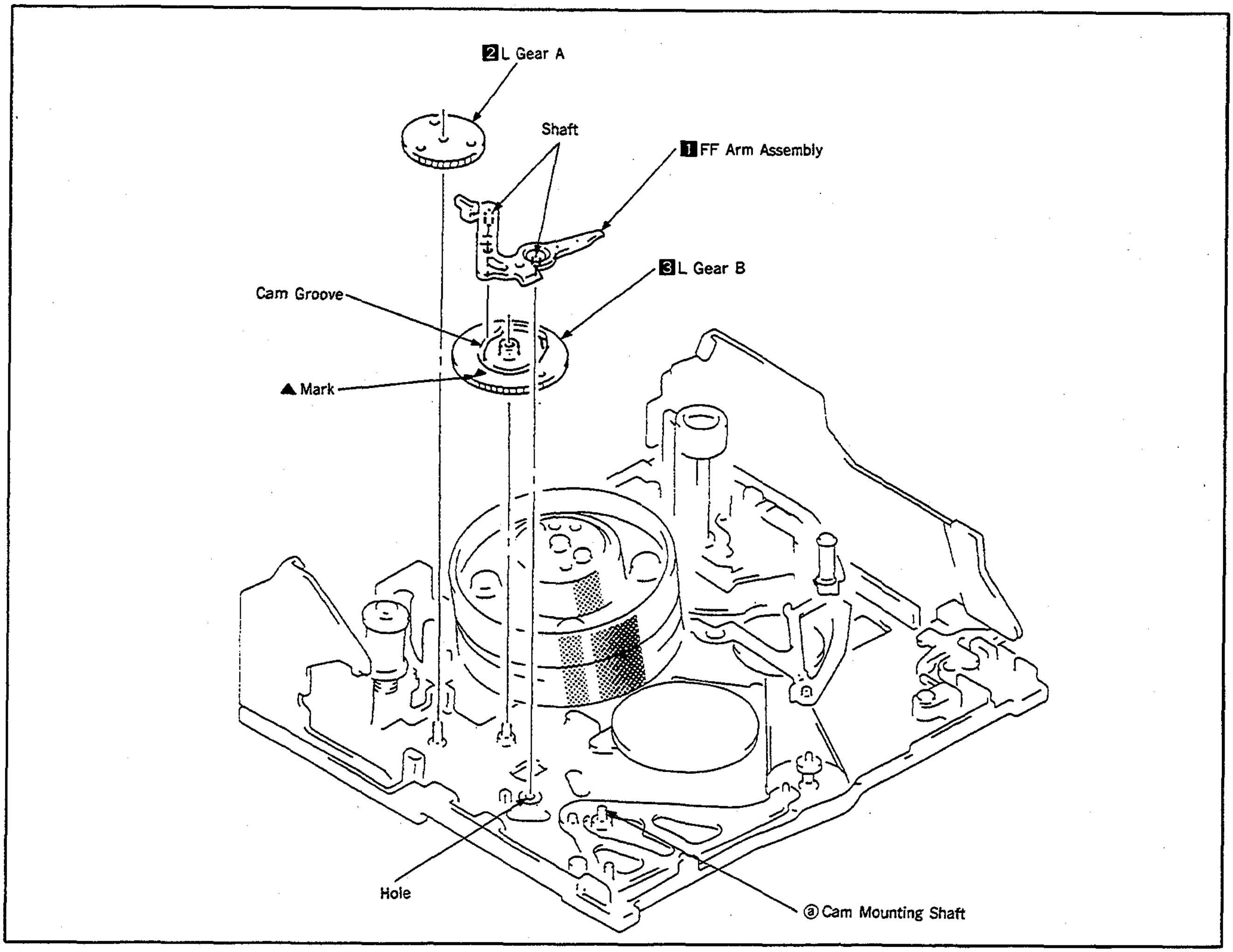


Fig. 27

3-20. RELAY PULLEY AND CHANGE GEAR ASSEMBLY (Fig. 28)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
3) Referring to 3-2, remove the protector base assembly.
4) Referring to 3-3, remove the drum assembly.
5) Referring to 3-7, remove the LS chassis assembly.
6) Referring to 3-14, remove the LS arm assembly.
7) Referring to 3-15, remove the M slider assembly.
8) Referring to 3-17, remove the cam.
9) Referring to 3-18, remove the GL arm assembly.
10) Referring to 3-16, remove the pinch press arm assembly.
11)Remove a lock washer ❶, then remove together the Change gear assembly ❷, relay belt ❸ and relay pulley ❹.

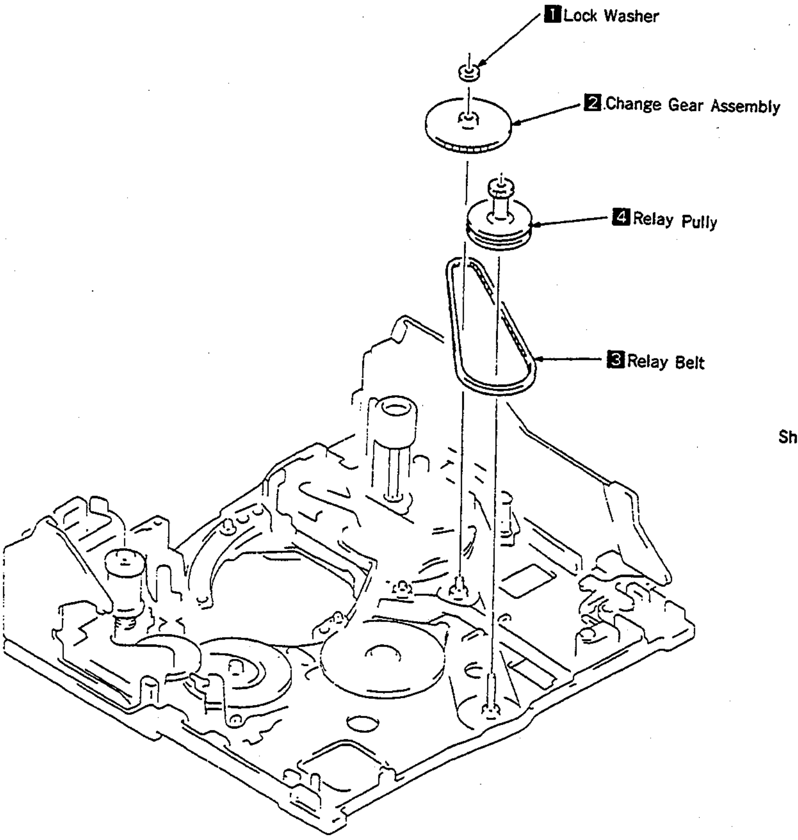
2. Mounting

*Give one or two drips of oil to the conversion gear shaft and relay pulley shaft respectively. (Oiling range is under the neck as shown in Fig. a.)

1) Hooking the relay belt ❸ to the relay pulley ❹ and Change gear assembly ❷, mount respective parts.
*At first, insert the relay pulley into the mechanical chassis-shaft, then the change gear assembly by engaging with the capstan motor gear.

Note : Take care not to damage the Change gear by the capstan motor gear.

2) Mount a lock washer ❶.
3) Referring to 3-16, mount the pinch press arm assembly.
4) Referring to 3-18, mount the GL arm asembly.
5) Referring to 3-17, mount the cam.
6) Referring to 3-15, mount the M slider assembly.
7) Referring to 3-14, mount the LS arm assembly.
8) Referring to 3-7, mount the LS chassis assembly.
9) Referring to 3-3, mount the drum assembly.
10) Referring to 3-2, mount the protector base assembly.
11) Referring to 3-1, mount the Retainer, Gooseneck assembly.
12) Referring to 1-1, mount the cassette compartment assembly.



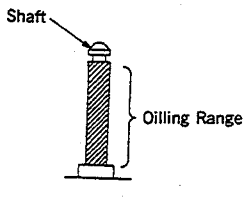


Fig. a

Fig. 28

3-21. ROTARY UPPER DRUM REPLACEMENT

1. Removoal

- If possible, make a recording before removal.

1) Remove the two screws 1 (Fig. 29).
2) Mount the jig 2 (Ref. No. J-10) with the two supplied screws 3, then screw the attached hexagon socket screws 4 to the jig 2. The rotary upper drum 5 will move upward and come off (Fig. 30).

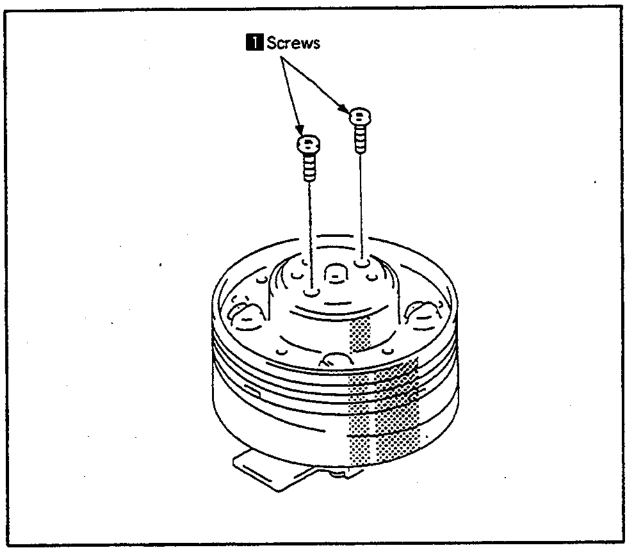


Fig. 29

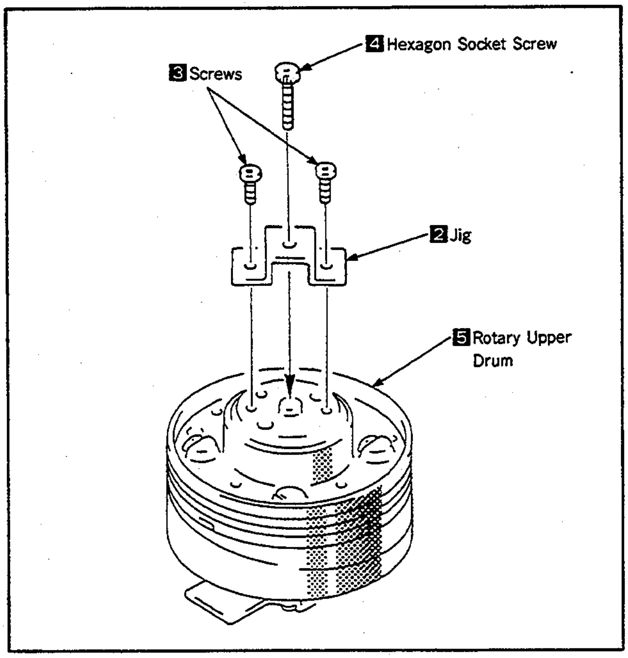


Fig. 30

2. Installation

1) Wipe clean the flange surface and the rotary upper drum 5 surface that makes contact with it, and confirm that they are free from dirt and scratches.
2) Insert the jig 6 (Ref. No. J-10) into the drum positioining hole, then set then set the rotary upper drum 5 by passing the jig through its positioning hole 7. (Fig.31)
3) Remove the jig 6 and push down the rotary upper drum 5 gently by hand. If it does not go all the way down, secure it temporarily by tightening the two screws 1 alternately (Fig.29).
4) Insert the jig 6 into the positioning hole 7 again and confirm that it goes in smoothly. If it does not, loosen the two screws 1, repeat step 2) of the Removal paragraph and restart the setting procedure.
5) Tighten the screws 1.

Note : After installing, be sure to perform tape path adjustment as described in section 4.

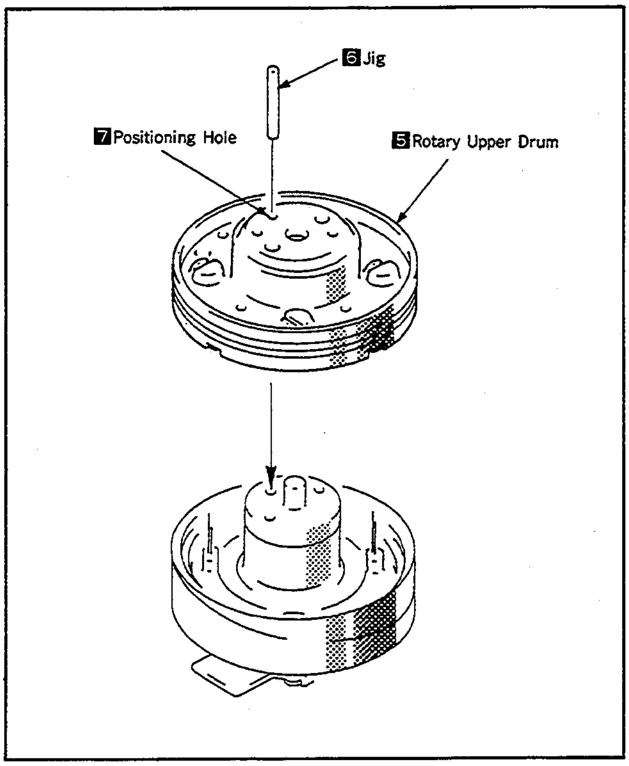


Fig. 31

3-22. ADJUSTMENT OF TENSION REGULATOR POSITION (Fig. 32)

1. Adjustment

1) Set a cassett tape and run the tape in the PB mode.
2) With the tape running, check that the distance from No.1 guide to No. 2 guide upper flange is 4.2 mm.
3) If they are not at the specified positions, perform adjustment in step 4) and subsequent steps.
4) Loosen the screw ❶.
5) If No.1 guide is located inside the specified position, shift the string block toward the arrow Ⓐ using the FWD B.T. adjusting driver (Ref No. J-15). Or, if it is located outside, shift toward the arrow Ⓑ.
6) Tighten the screw ❶.

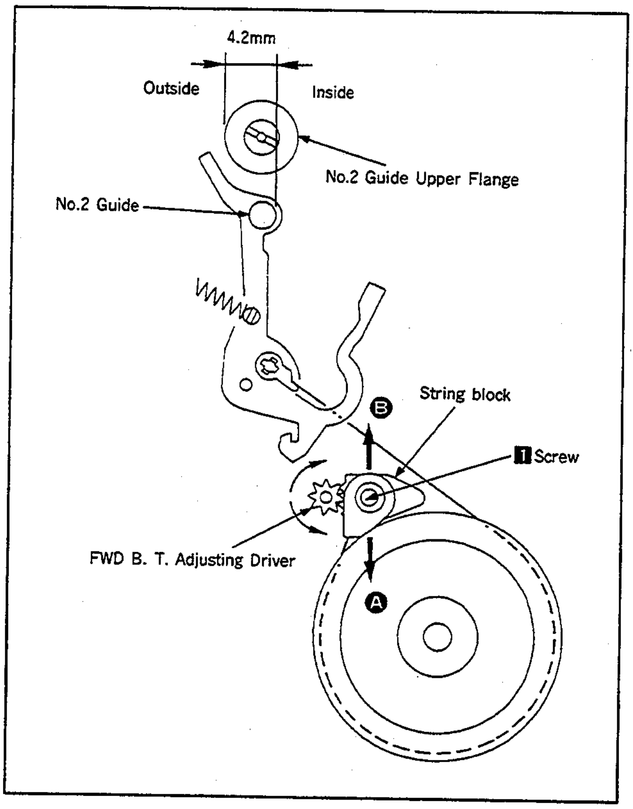

4.2mm
Outside
Inside
No.2 Guide Upper Flange
No.2 Guide
String block
Ⓑ
❶Screw
FWD B. T. Adjusting Driver
Ⓐ

Fig. 32

3-23. FWD BACK TENSION ADJUSTMENT (Fig.33)

1) Select the TEST mode 1 using the adjusting remote controller (Ref No. J-17).
2) Set the torque cassette (Ref No.J-10).
3) Select the FWD mode, and check that the torque of S reel table is 8.5 ~ 11.5 g · cm.
   If it is out of standard, adjust the TG-1 spring hook position using the FWD B.T. adjusting driver (Ref No. J-15).

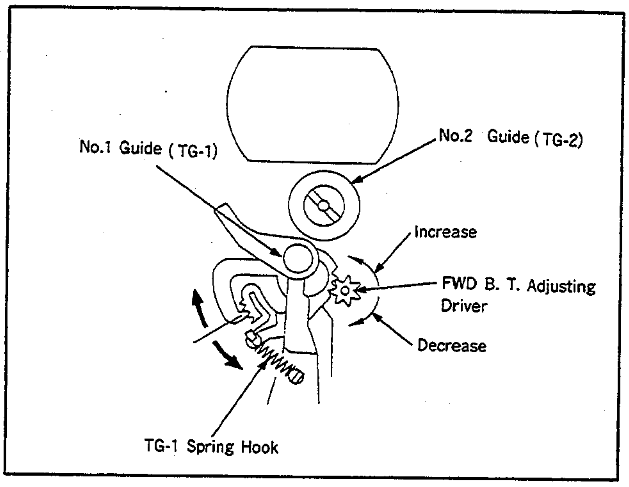

No.1 Guide (TG-1)
No.2 Guide (TG-2)
Increase
FWD B. T. Adjusting Driver
Decrease
TG-1 Spring Hook

Fig. 33

3-24. REEL TORQUE CHECK

1) Set the torque cassette.
2) Select the FWD mode, and check that the torque fluctuation center of T reel table is 7 ~ 17 g · cm
3) Select the REV mode, and check that the torque fluctuation center of S reel table is 25 ~ 39 g · cm.
4) Select the REV mode, and check that the torque of T reel table is 7 ~ 17 g · cm.
5) If the above data is not satisfied, the tension regulator band, T hard tab or T soft assembly will be faulty. Check them first, and if no abnormality is found, replace respective reel tables.

4. TAPE PATH ADJUSTMENT

The 8mm video system uses ATF (Automatic Track Finding) which instantaneously controls a tape running speed based on 4 types of pilot signals and performs high-precision tracking.

This does away a tracking control knob and allows accurate track tracing.

On the other hand, however, the ATF system has a problem in adjusting the tape path system. That is, if head tracing is out of order a little, the ATF automatically corrects it, which means that perfect adjustment cannot be done.

Therefore, in the A mechanism, the ATF system is forcibly operated to shift a tracking amount constantly (approx. 1/4) by setting the PATH mode with the adjusting remote controller (Ref No.J-16). So, fine tracking adjustment can be easily done. Also, the PATH mode setting varies with the model, and therefore, refer to the Service Manual.

Example) For CCD-FX410 series

Set the adjusting remote controller to the HOLD ON side.

1) Set PAGE : 1, ADDRESS : 00, DATA : 01 to cancel the PROTECT mode.
2) Set PAGE : D, ADDRESS : 01, DATA : 03 to select the PATH mode.

Note : Setting of PATH mode = TRACK SHIFT mode

If the adjusting remote controller (Ref No.J-16) is set to HOLD OFF once, then set to HOLD ON again after mode setting, the display of ADDRESS and DATA changes.

3) After adjustment is over, set DATA : 00, and press the PAUSE buttom on the adjusting remote controller (Ref No. J-16).

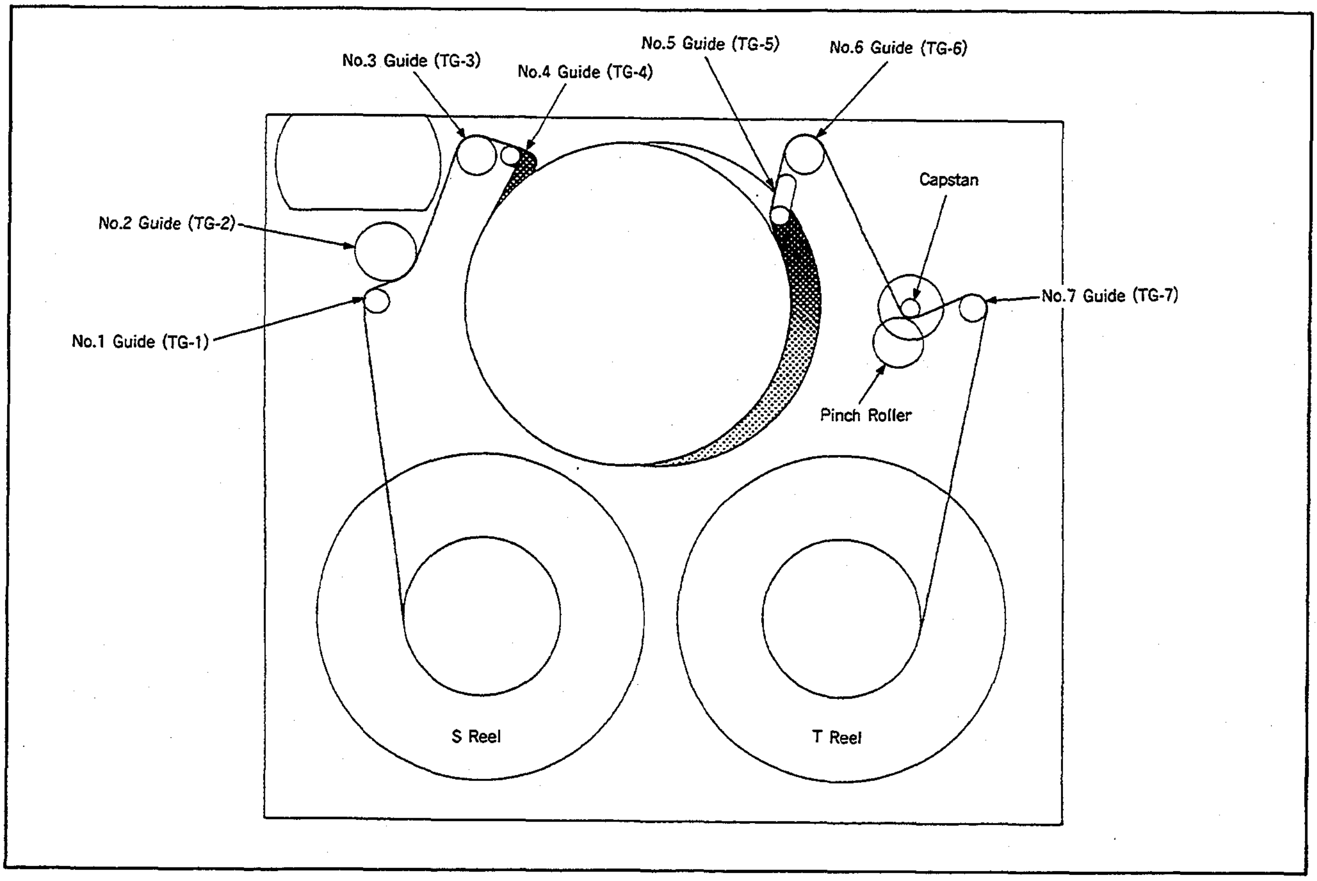


Fig. 34-A

[Note on Adjustment of No.7 Guide (TG-7)]
The height adjustment screw for No.7 guide (TG-7) is located at some distance from the guide (refer to Fig.41).
Therefore, when performing section 4-4. No.7 Guide (TG-7) Adjustment it is convenient to use the alignment tape for tracking (Ref. No. J-6), modified as follows, and perform adjustment in playback mode.

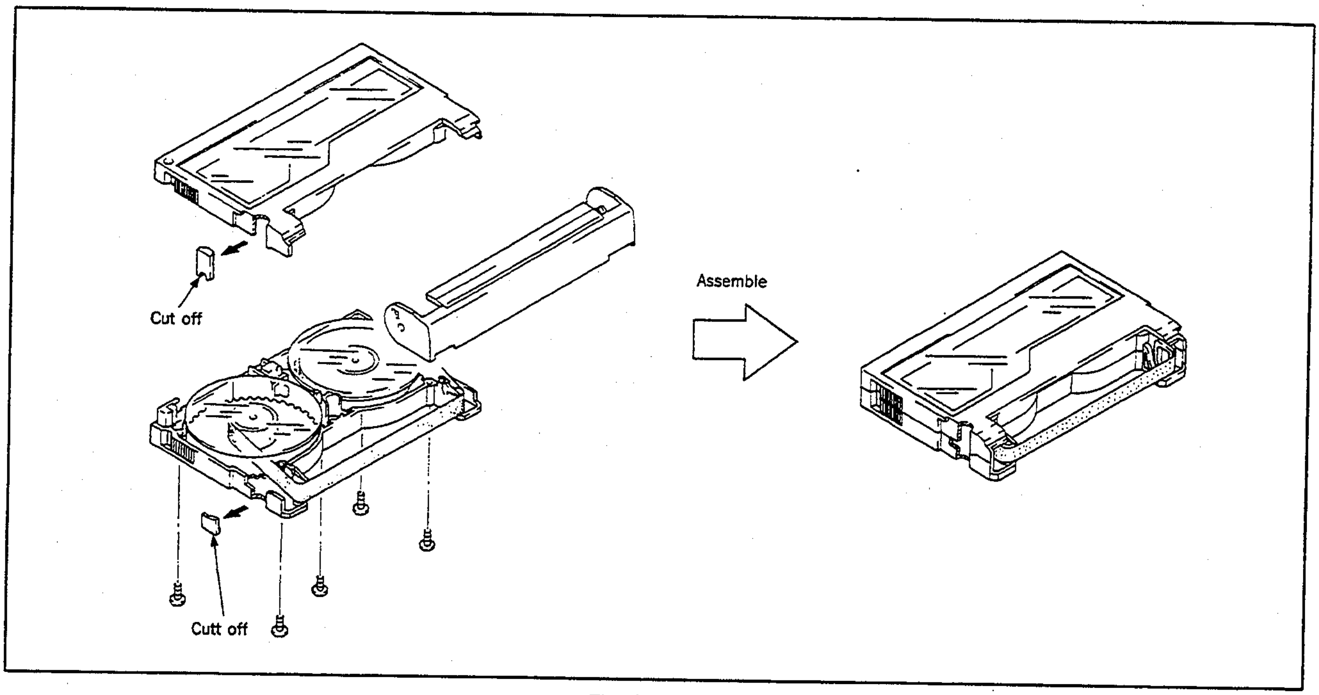


Fig. 34-B

4-1. PREPARATION FOR ADJUSTMENT

1) Clean the tape running surface (tape guides, drum, capstan shaft, pinch roller) (Fig. 34-A).
2) Set the PATH mode using the adjusting remote controller.
3) connect an oscilloscope to the check pin connector of the set.
   Example) For CCD-FX410 series
   CH1 : CN001 pin ③ (PB RF OUT) on CS-31 board
   CH2 : CN001 pin ④ (RF SWP) on CS-31 board
4) Play back a tracking alignment tape (NTSC : WR5-1N, or PAL : WR5-1C).
5) Check that a RF waveform is flat at the inlet and outlet of the oscilloscope (Fig. 35 ⓐ).
   If not flat, make adjustment with the procedures below.
   When the RF waveform is not flat at the inlet/outlet ; See Fig. 35 ⓑ and ⓒ.

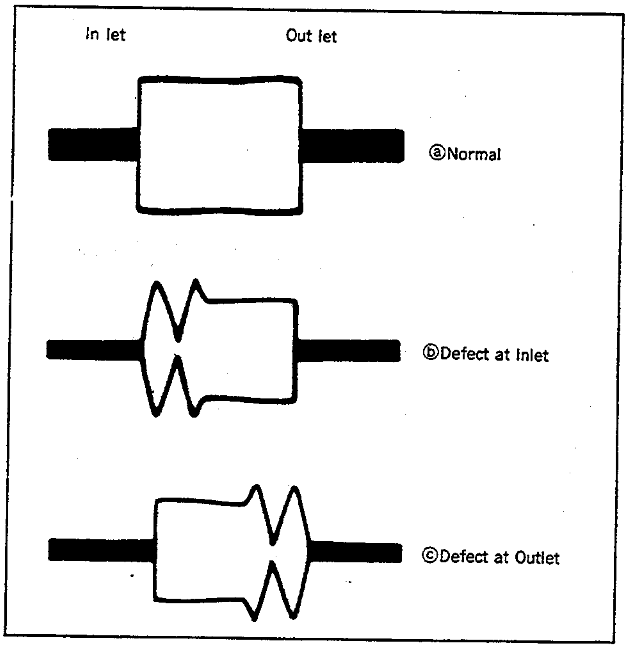


Fig. 35

4-2. TRACKING ADJUSTMENT (Fig. 36, 37)

1) Play back the tracking alignment tape.
2) Loosen the No.3 guide (TG-3) lock screw ❶ and turn the No.3 guide to flatten the waveform at the inlet.
3) Tighten the No.3 guide (TG-3) lock screw ❶ to lock the No.3 guide.
4) Loosen the No.6 guide (TG-6) lock screw ❷ and turn the No.6 guide to flatten the waveform at the outlet.
5) Tighten the No.6 guide (TG-6) lock screw ❷ to lock the No.6 guide. When this is done, make sure that the waveform does not change at the outlet.

Note : Be careful not to loosen the lock screw too much because the guide is easily moved.

: Take care not to allow interference between No.6 guide and drum when tightening the No.6 guide lock screw.

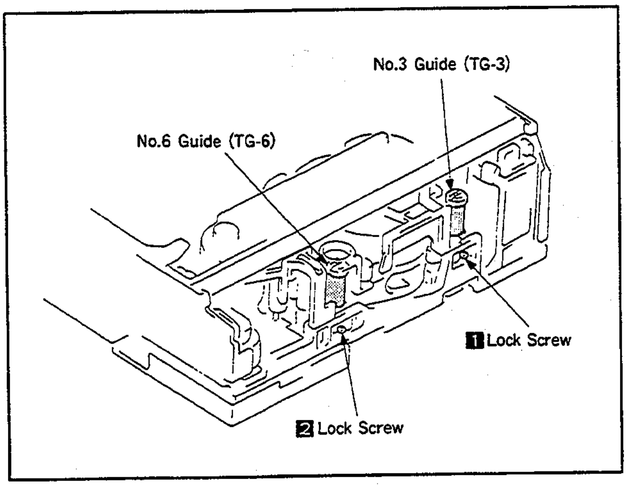


Fig. 36

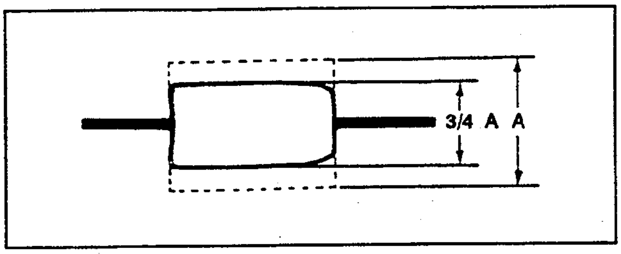


Fig. 37

4-3. No.2 GUIDE (TG-2) ADJUSTMENT

When the No.2 guide has been turned or replaced, perform height presetting before this adjustment.

4-3-1. No. 2 GUIDE (TG-2) HEIGHT PRESETTING (Fig. 38)

1) Rotating the TG-2 upper flange, adjust the height of bottom face of TG-2 lower flange from the top face of dowel on the mechanical chassis to 3.3 ± 0.05 mm.

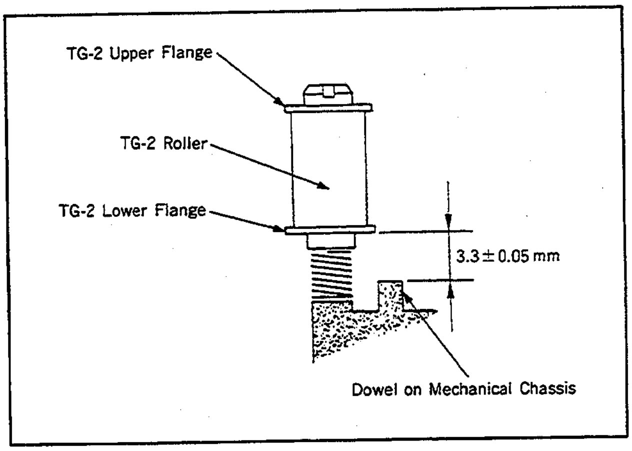


Fig. 38

[Reference]
This A mechanism is equipped with four adjustable guides (TG-2, 3, 6 and 7) . To raise or lower the respective guide rotate the corresponding adjustment screw as shown below.

Guide	Guide adjustment	Rotating direction of adjustment screw
TG-2, 3, 6	Raise	Counterclockwise
	Lower	Clockwise
TG-7	Raise	Clockwise
	Lower	Counterclockwise

4-3-2. No. 2 GUIDE (TG-2) ADJUSTMENT (Fig. 39, 40)

1) Play back a thin tape like the P6-120MP, etc. and set the REV mode.
2) Confirm that the tape is not bent at the lower flange ❷ of the No.2 guide (TG-2) ❶ (Fig. 39). If it is, turn the upper flange ❸ of the No.2 guide (TG-2) clockwise with a screwdriver, lowering it until the tape is straightened.
3) Play back the alignment tape for tracking adjustment.
4) Perform tracking adjustment and trcking fine adjustment as described in sections 4-2.
5) In the track shift mode, CUE/REV the tape, then play it back and confirm that the RF waveform rises flat within 2 seconds.
6) If the waveform is not normal (Fig. 40), turn the upper flange ❸ of the No. 2 guide (TG-2) ❶ 90° counterclockwise and repeat step 5.
   Repeat steps 5) and 6) until a normal waveform is obtained.
   Then, confirm that the tracking waveform has not changed.
   If it has, perform fine adjustment of entrance side tracking and repeat step 5).

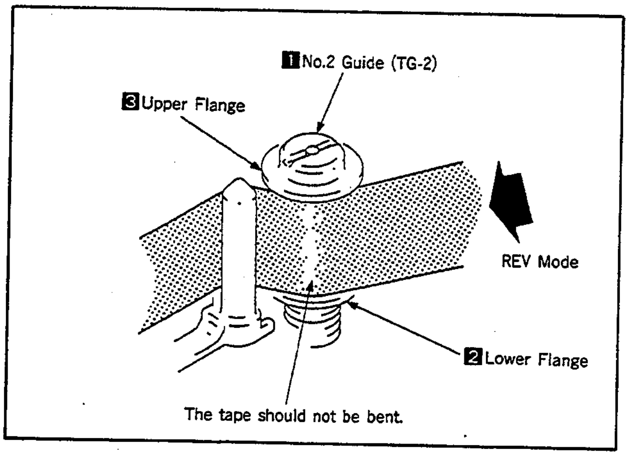


Fig. 39

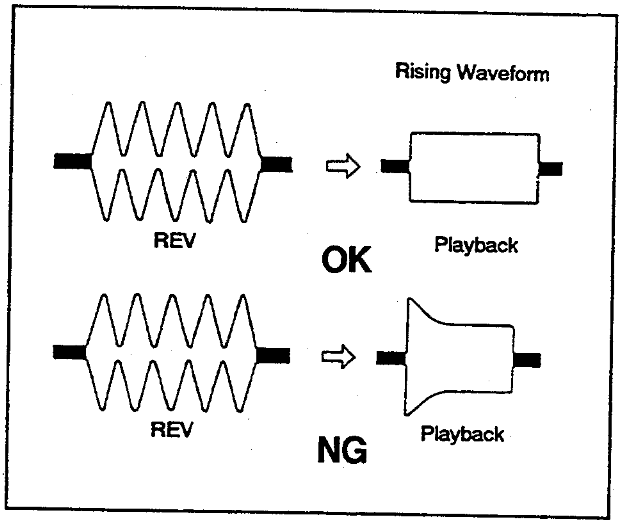


Fig. 40

4-4. No.7 GUIDE (TG-7) ADJUSTMENT (Fig. 41)

Note : This adjustment requires the No. 7 guide adjusting cassetetape (Fig. 34-B).

1) Play back the No.7 guide adjusting cassetetape and set the REV mode.
2) Confirm that the tape is not bent between the No.6 guide (TG-6) ❶ and the capstan ❷. If it is, turn the hight adjusting screw ❹ of the No.7 guide (TG-7) ❸ until the tape is straightened.
3) Set the playback mode again and confirm that the tape is not bent between the capstan ❷ and the hight adjusting screw ❹ of the No.7 guide (specification : 0.5mm or less). If the tape is bent beyond the specification, turn the No.7 guide (TG-7) ❸ until bending is within the specification (0.5mm).
   If in the REV mode tape bending between the No. 6 guide (TG-6) ❶ and the capstan ❷ is 0.3mm or less, adjustment can be considered completed.

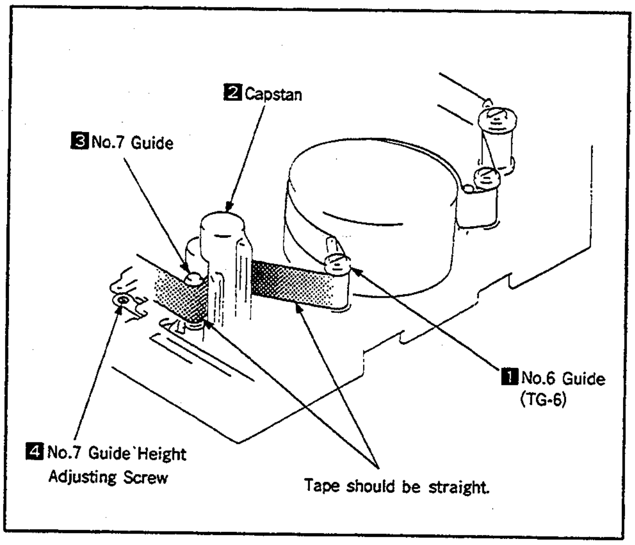


Fig. 41

4-5. CUE AND REV WAVEFORM CHECK (Fig. 42)

1) Play back the alignment tape for tracking adjustment and set the REV mode. Confirm that waveform peaks maintain a constant pitch of 5 seconds or more (Fig. 42). In case pitch is not constant, perform section 4-2.Tracking Fine Adjustment and section 4-4. No.7 Guide Adjustment.
2) Set the CUE mode. Confirm that waveform peaks still maintain a constant pitch of 5 seconds or more (Fig. 42).
   Otherwise, perform section 4-2 Tracking Fine Adjustment.

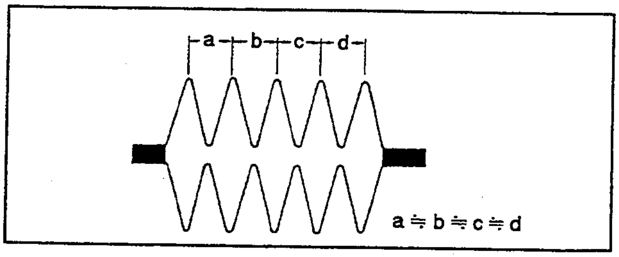


Fig. 42

4-6. CHECK AFTER ADJUSTMENT

4-6-1. TRACKING CHECK

1) Confirm that the amplitude of RF waveform is reduced to approx. 3/4 when the track shift mode is set (Fig. 43).
2) Then, confirm that the minimum amplitude value (EMIN) is 65 % of the maximum value (EMAX) or larger (Fig. 44).
3) Confirm that no large fluctuations occur on the waveform (Fig. 45).

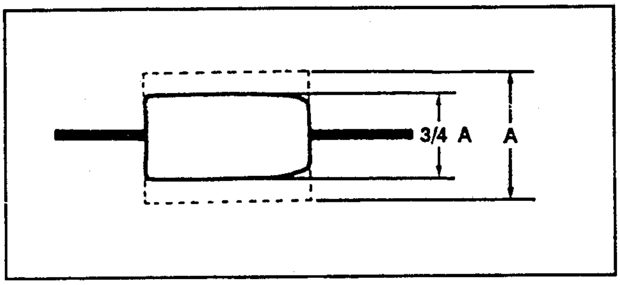
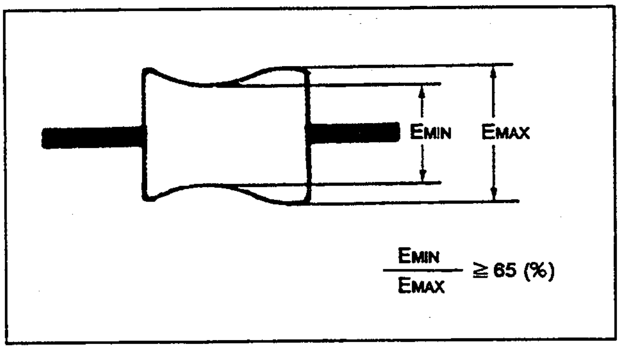
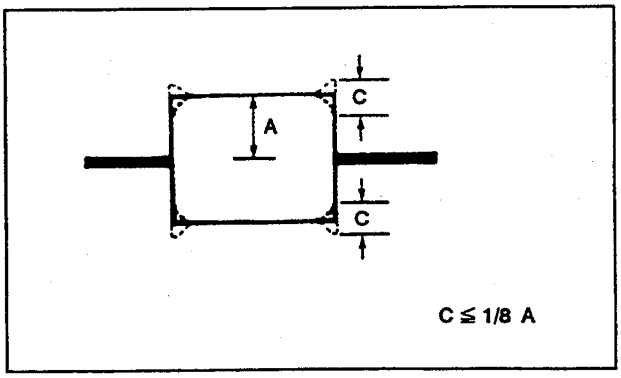


Fig. 43



$\frac{E_{MIN}}{E_{MAX}} \geq 65\ (\%)$

Fig. 44



$C \leq 1/8\ A$

Fig. 45

4-6-2. RISING CHECK (Fig. 46)

1) Play back the alignment tape for tracking adjustment.
2) Cancel the track shift mode.
3) Eject the tape, then load it again.
4) Set the playback mode and confirm that the RF wave form rises flat within 2 seconds. Also confirm that the tape is not bent around the pinch roller.
5) CUE/REV and FF/REW the tape, then play it back and confirm that the RF waveform rises flat within 2 seconds, Also confirm that the tape is not bent around the pinch roller.
6) Repeat steps 3) to 5) once more.

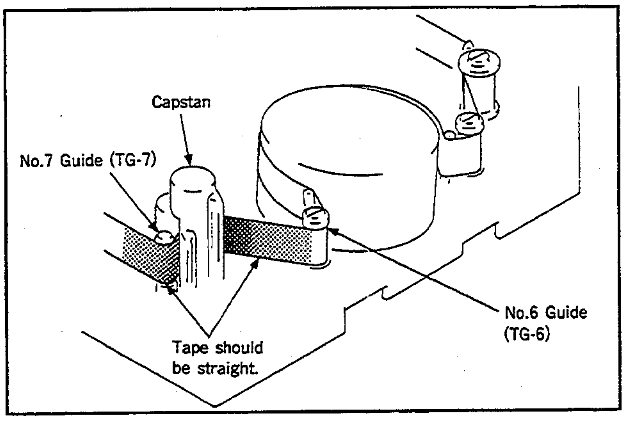

Capstan
No.7 Guide (TG-7)
No.6 Guide (TG-6)
Tape should be straight.

Fig. 46

4-6-3. TAPE PATH CHECK (Fig. 47)

1) Play back a thin tape like the P6-120MP (NTSC) or P5-90MP (PAL), etc. and confirm that no tape rising occurs, and that curling is less than 0.3mm, at the lower flange of the No. 2 guide , the upper flange of the No.3 guide, the upper flange of the No. 6 guide and the No.7 guide upper and lower flanges.
2) Confirm that no tape rising occurs and that curling is less than 0.3mm at the flange of all guide when pressing the FF button in the playback mode to set the CUE mode, or the REW button to set the REV mode.

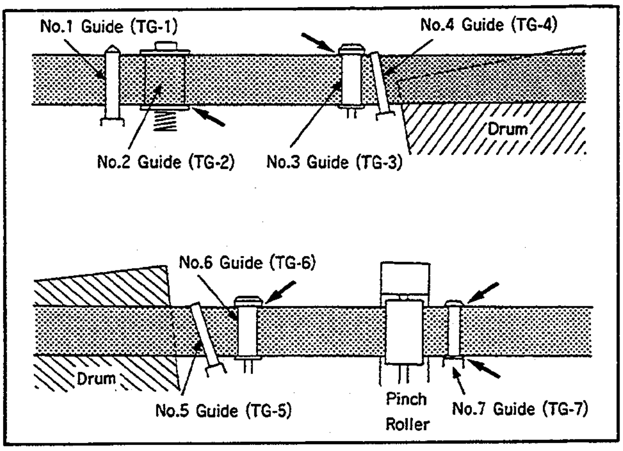

No.1 Guide (TG-1)
No.4 Guide (TG-4)
Drum
No.2 Guide (TG-2)
No.3 Guide (TG-3)
No.6 Guide (TG-6)
Drum
No.5 Guide (TG-5)
Pinch Roller
No.7 Guide (TG-7)

Fig. 47

8mm Video MECHANICAL ADJUSTMENT MANUAL IV

A MECHANISM

SUPPLIMENT-2

Video 8

〈Connection of Mode Selector IV Conversion Connector〉

In use of Mode selector IV conversion connector(J-6082-167-A), there are two different connecting methods depending on the model connected:

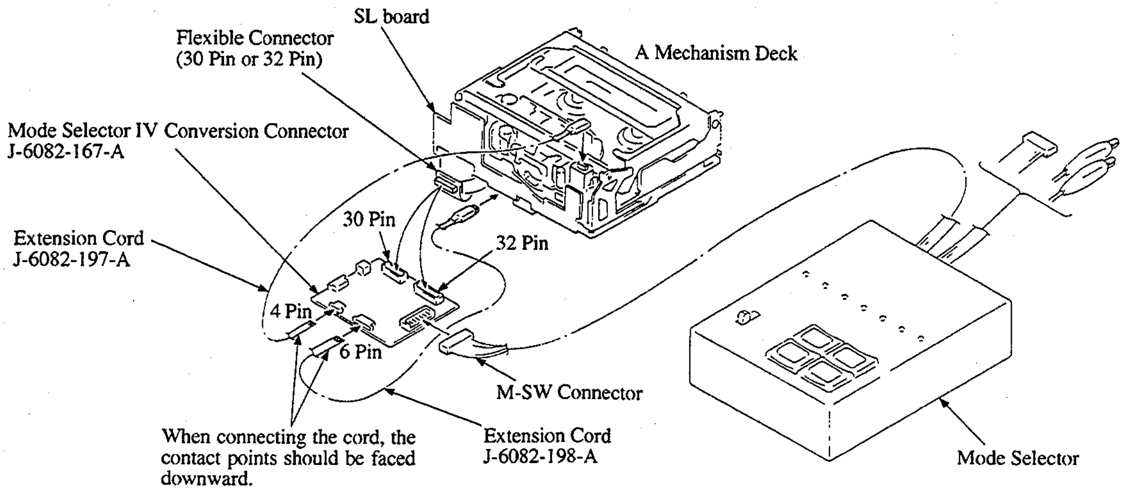
1. CCD-FX series

With the SL board mounted on mechanical deck, connect 30-pin(or 32-pin) connector to 30-pin(or 32-pin) Mode selector IV conversion connector.

(CCD-FX300 series, FX400 series. FX500 series
→ 30-pin connector (FP425 or FP600)
CCD-FX700 series → 32-pin connector (FP477))

2. Models other than above

Connect the extension cord(J-6082-197-A) to loading motor 4-pin connector and extension cord (J-6082-198-A) to mode switch 6-pin connector in mechanical deck, then connect the other end of cord to 4-pin and 6-pin connectors of Mode selector IV conversion connector respectively, as shown below.


SL board
Flexible Connector (30 Pin or 32 Pin)
A Mechanism Deck
Mode Selector IV Conversion Connector J-6082-167-A
30 Pin
32 Pin
Extension Cord J-6082-197-A
4 Pin
6 Pin
M-SW Connector
When connecting the cord, the contact points should be faced downward.
Extension Cord J-6082-198-A
Mode Selector

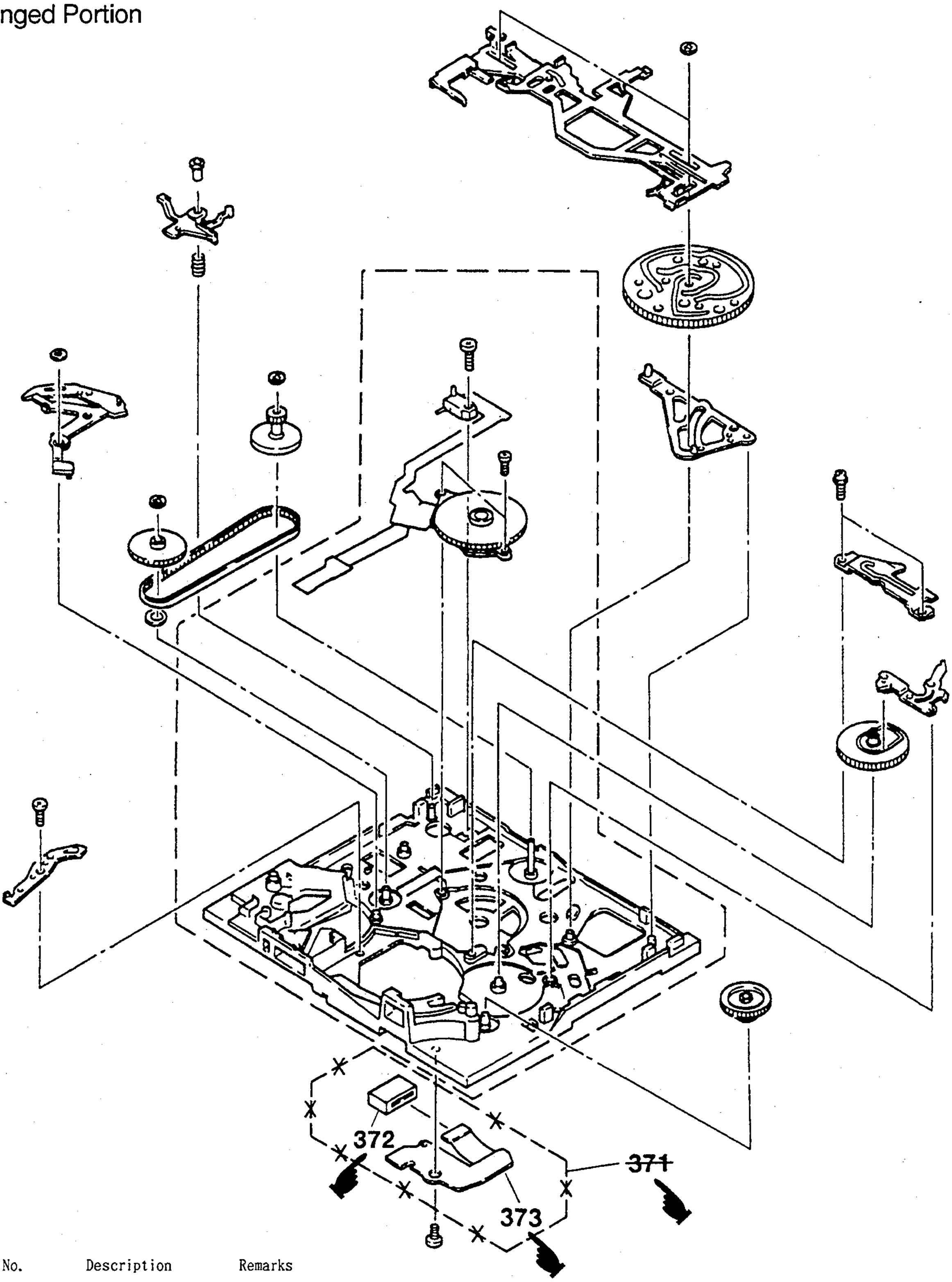
〈CORRECTION〉

P10. 2-4 Service jigs list

		Incorrect		Correct
J-15	FWD B.T adjusting driver	J-6082-182-A	➜	J-6082-187-A

MECHANISM CHASSIS ASSEMBLY (2)

☛ : Changed Portion



Ref.No.	Part No.	Description	Remarks
~~371~~	~~A-7040-311-A~~	~~FP-444 ASSY~~	☛
372	1-691-254-13	CONNECTOR, TRANSLATION 10P	☛
373	1-641-639-13	FP-442 FLEXIBLE BOARD	☛

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9-973-199-84

Sony Corporation
Personal Video Group

GV-300E

SERVICE MANUAL

AEP Model
UK Model
Germany Model

VIDEO
WALKMAN

SPECIFICATIONS

System

Video recording system	Rotary two-head helical scanning FM system
Audio recording system	Rotary head, FM system
Video signal	CCIR system B, G, H and I, PAL colour
Usable cassettes	8 mm video format cassettes
Tape speed	SP: approx. 2.0051 cm/sec. LP: approx. 1.0058 cm/sec
Recording time	SP mode: 1.5 hours LP mode: 3 hours (with Sony P5-90 cassette)
Playback time	SP mode: 1.5 hours LP mode: 3 hours (with Sony P5-90 cassette)
Fast forward/rewinding time	Approx. 7 minutes (with Sony P5-90 cassette)

LCD section

Picture	4 inches measured diagonally 8.2 × 6.2 cm (3 1/4 × 2 1/2 inches)
On-screen display	TN LCD/TFT active matrix method Total picture-element number: 112,086 (479 × 234)

Tuner section

Channel coverage	VHF: E2 – E12 channels UHF: 21 – 69 channels Cable TV channels: S01 – S20
Aerial input	75-ohm minijack for VHF/UHF

Inputs/outputs

VIDEO/AUDIO IN/OUT	Selectable automatically according to the operation
Video input	Phono jack, 1 Vp-p, 75 ohms, unbalanced, sync negative
Video output	Phono jack, 1 Vp-p, 75 ohms, unbalanced, sync negative
Audio input	Phono jack, – 7.5 dBs (0 dBs = 0.775 Vrms), input impedance more than 47 kilohms
Audio output	Phono jack, – 7.5 dBs (330 mV) at load impedance 47 kilohms, output impedance less than 10 kilohms
Speakers	16 ohms, 150 mW
Earphones	Stereo minijack, 8 ohms × 2
CONTROL S	Minijack
Camera input	12-pin

Timer section

Clock	Crystal lock
Time indication	24-hour cycle
Timer setting	Only for recording, 1 event/24 hours

MICROFILM

General

Power requirements	Battery mounting surface input: 6.0 V (battery pack) 6.5 V (DC pack DCP-77)
Power consumption	6.9 W (for continuous playback)
Operating temperature	0°C to 40°C (32°F to 104°F)
Storage temperature	– 20°C to 60°C (– 4°F to 140°F)
Dimensions	129 × 71 × 226 mm (w/h/d) (5 1/8 x 2 7/8 x 9 inches)
Weight	Approx. 1.1 kg (2 lb 7 oz) not incl. battery pack
Accessories supplied	Stereo earphones (1) Connecting cord (1) Carrying case (1) Battery pack NP-66H (1) **(AEP, UK Model)** AC power adaptor AC-V30 (1) Lithium battery (1)

AC-V30

Power consumption	20 W
Power requirements	100 – 240 V AC, 50/60 Hz
Output voltage	DC OUT: 7.5 V, 1.6 A in operating mode
Battery charge terminal:	10 V, 1.3 A in charge mode
Operating temperature	0 C°to 40°C (32°F to 104°F)
Storage temperature	– 20°C to 60°C (– 4°F to 140°F)
Dimensions	Approx. 67 × 39 × 138 mm (w/h/d) (2 3/4 × 1 3/8 × 5 1/2 inches) including projecting parts and controls
Weight	Approx. 310 g (11 oz)

Design and specifications are subject to change without notice.

Note
This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

— Continued on next page —

For MECHANICAL ADJUSTMENT, refer to the "8mm Video MECHANICAL ADJUSTMENT MANUAL III (U MECHANISM)" (9-972-732-11)

8 VIDEO TV RECORDER

SONY®

LIST OF RECOMMENDED ACCESSORIES

	Model name	Page
Battery pack	NP-77H, NP-77, NP-55	12
AC power adaptor/Battery charger	AC-V55, BC-55	12
Car battery charger	DC-V30	11
DC pack	DCP-77, DCP-55	17
Color video camera	CCD-G100STE, CCD-G100E, CCD-G1E	47, 48
Pan tilter	HVR-200	51
Connecting cord	VMC-810ES/820ES (1m/2m) VMC-710EM/720EM (1m/2m)	52, 56
Cleaning cassette	V8-25CLH	62
RFU adaptor kit	RFU-89EKA	55

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

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SECTION 1
GENERAL

This section is extracted from instruction manual.

Features

The "Video Walkman" GV-300E is an 8mm video recorder with a LCD (Liquid Crystal Display). Its compact and lightweight design allows you to watch TV programmes and video tapes anywhere and anytime you like.

With this video TV recorder, you can:
- view the playback picture of 8 mm video tapes.
- view TV programmes.
- record TV programmes.

In addition, by connecting it to a video camera (not supplied), you can record pictures with the camera, and play back the recorded pictures on it immediately.

Other features

- Hi-fi stereo for high quality sound *
- CRYSTAL-CLEAR still/slow/picture search on LCD
- Timer-activated recording
- SLEEP timer for turning off the unit automatically
- MEGA BASS circuit for dynamic bass sound

*** Hi-fi Stereo System**

On the 8 mm video standard track, the sound is recorded/played back in Hi-fi monaural.
The PCM digital stereo sound is recorded/played back on the PCM track as an option.
With this unit, Hi-fi stereo sound can be recorded on the standard track.
To maintain compatibility with the conventional Hi-fi monaural equipment, the Hi-fi stereo sound is recorded as L − R sound using the 1.7 MHz carrier and L + R sound using the 1.5 MHz carrier as the FM audio signal.
To play back the tape recorded by its Hi-fi stereo system, this unit uses a matrix circuit to produce the L and R stereo sounds separately. When conventional Hi-fi monaural equipment is used to play back a tape recorded in Hi-fi stereo, it will produce the L + R monaural sound because it can reproduce only the 1.5 MHz carrier.
The Hi-fi stereo system of this unit provides a live stereo sound atmosphere even when using the 8 mm video standard track.

This unit uses 8 mm video format cassettes. It records in the SP mode (approximately 2.0051 cm/second) and the LP mode (approximately 1.0058 cm/second) and can play back in the SP mode and LP mode. The quality of the playback picture in the LP mode, however, will not be as good as that in the SP mode.

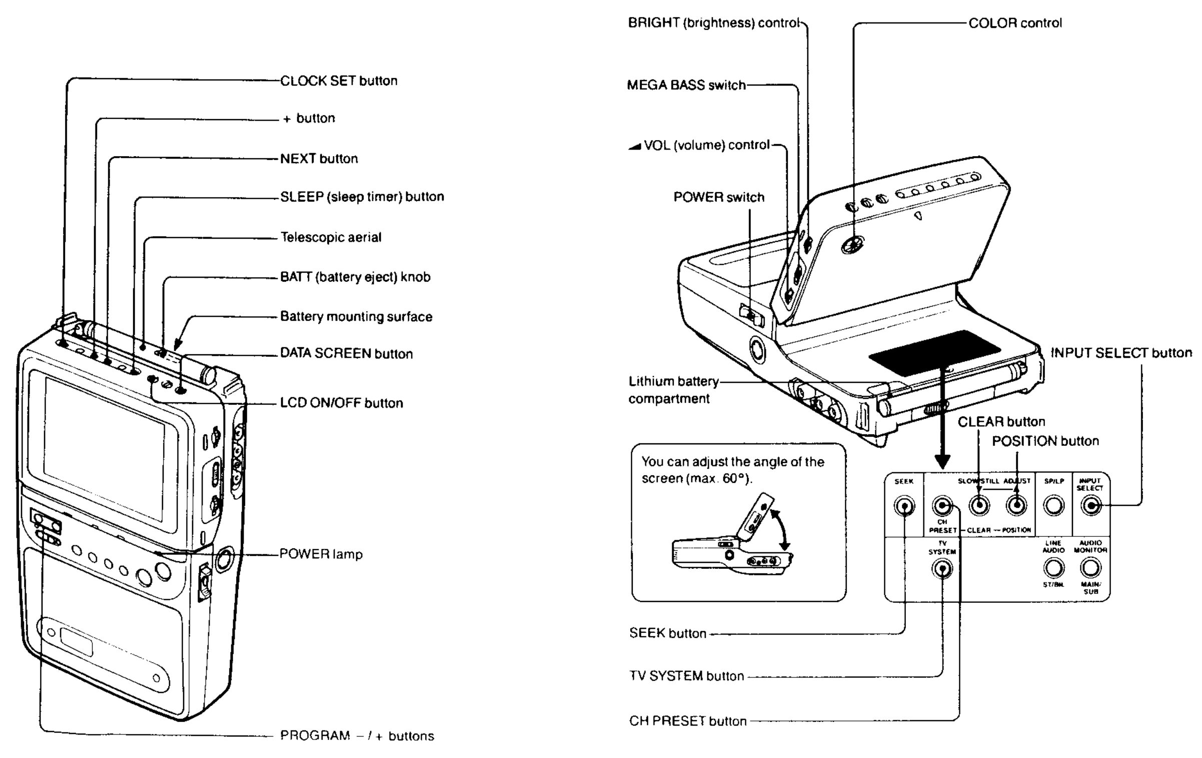
Television programmes, films, video tapes and other materials may be copyrighted. Unauthorized recording of such material may be contrary to the provisions of the copyright laws.

PCM recording/playback is not possible with this unit. The PCM sound recorded with another recorder cannot be played back with this unit.

For using this unit abroad, see page 64.

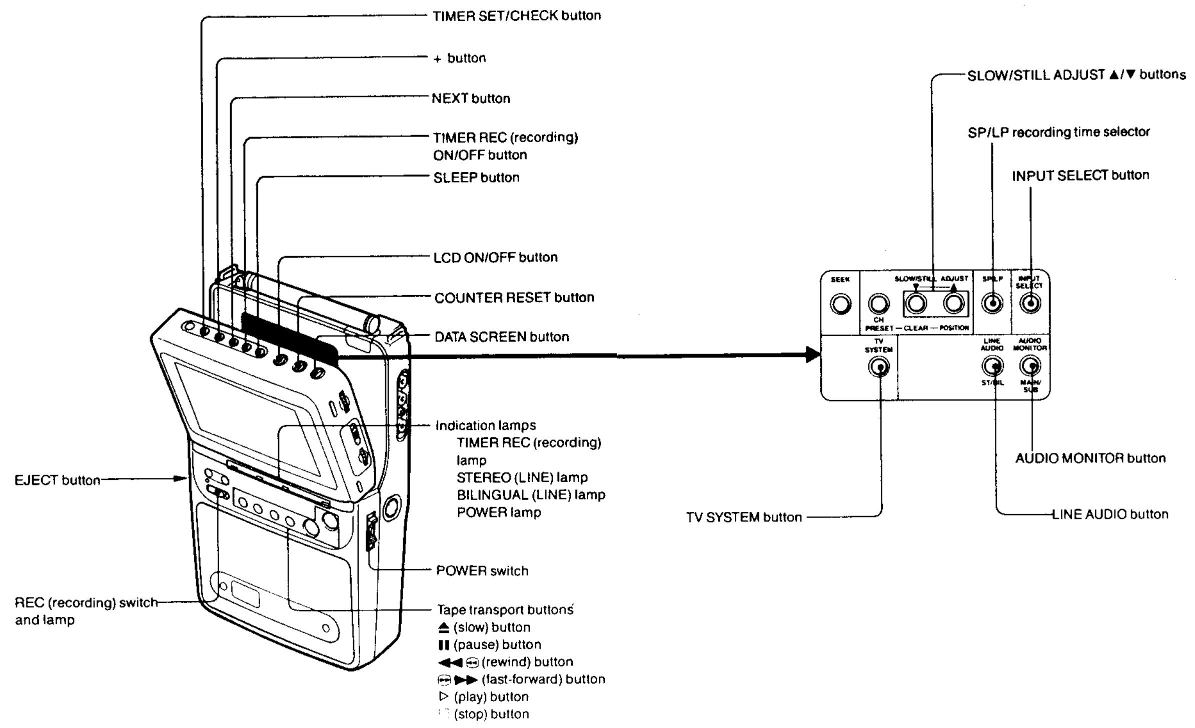
Location of Parts and Controls

Parts used for watching TV programmes

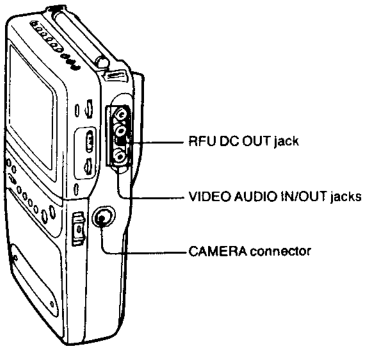

CLOCK SET button
+ button
NEXT button
SLEEP (sleep timer) button
Telescopic aerial
BATT (battery eject) knob
Battery mounting surface
DATA SCREEN button
LCD ON/OFF button
POWER lamp
PROGRAM − / + buttons
BRIGHT (brightness) control
COLOR control
MEGA BASS switch
VOL (volume) control
POWER switch
Lithium battery compartment
INPUT SELECT button
CLEAR button
POSITION button
SEEK
SLOW/STILL ADJUST
SP/LP
INPUT SELECT
CH PRESET
CLEAR — POSITION
TV SYSTEM
LINE AUDIO
AUDIO MONITOR
ST/BIL
MAIN/SUB
SEEK button
TV SYSTEM button
CH PRESET button

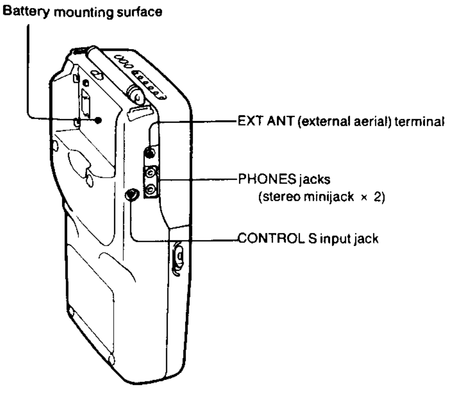
You can adjust the angle of the screen (max. 60°).

Parts used for VTR playback/recording


TIMER SET/CHECK button
+ button
NEXT button
TIMER REC (recording) ON/OFF button
SLEEP button
LCD ON/OFF button
COUNTER RESET button
DATA SCREEN button
Indication lamps
TIMER REC (recording) lamp
STEREO (LINE) lamp
BILINGUAL (LINE) lamp
POWER lamp
EJECT button
POWER switch
REC (recording) switch and lamp
Tape transport buttons
▲ (slow) button
❚❚ (pause) button
◀◀ (rewind) button
▶▶ (fast-forward) button
▷ (play) button
(stop) button
SLOW/STILL ADJUST ▲/▼ buttons
SP/LP recording time selector
INPUT SELECT button
SEEK
SLOW/STILL ADJUST
SP/LP
INPUT SELECT
CH
PRESET — CLEAR — POSITION
TV SYSTEM
LINE AUDIO
AUDIO MONITOR
ST/BIL
MAIN/SUB
AUDIO MONITOR button
LINE AUDIO button
TV SYSTEM button

Parts used for connection

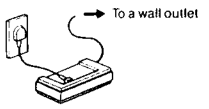
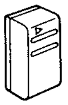
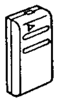
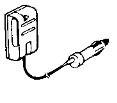
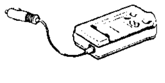

RFU DC OUT jack
VIDEO AUDIO IN/OUT jacks
CAMERA connector


Battery mounting surface
EXT ANT (external aerial) terminal
PHONES jacks
(stereo minijack × 2)
CONTROL S input jack

Getting Ready

Power Sources

Selection of Power Sources

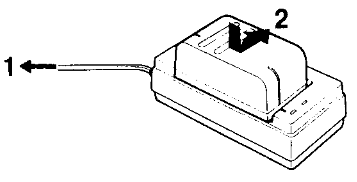
Place	Power sources		Page
Indoors	AC power adaptor AC-V30 (supplied) To a wall outlet 		16
Outdoors	Battery pack NP-66H (supplied), NP-77H or NP-77 	NP-55 	12
In the car	DC pack DCP-77 	Car battery charger DC-V30 	17

The above accessories, except for the AC-V30 and NP-66H, are not supplied.

Disconnecting the power source during recording or playback operations may damage the cassette tape. If this is done accidentally, supply the power again immediately and turn the power on.

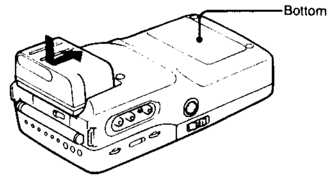
Using with Battery Pack — NP-66H, NP-77H, NP-77 or NP-55

1 First, charge the battery pack.
Use the supplied AC-V30 AC power adaptor.



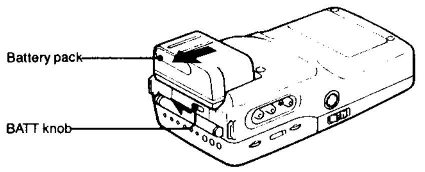
1 Connect the AC-V30 to a wall outlet.
2 Install the battery pack.
Align the right side of the battery pack with the line on the AC power adaptor.
3 While pressing the battery pack, slide it in the direction of the arrow.
The POWER lamp (green) and the CHARGE lamp (orange) on the AC-V30 light up.
The charging begins.
When the charging is completed, the CHARGE lamp goes out.
Unplug the unit from the wall outlet and the POWER lamp goes out.

2 Attach the battery pack to the video TV recorder.
Align the battery pack with the white line on the video TV recorder, then while pressing, slide the battery pack in the direction of the arrow.



- The charging time is about 100 minutes for NP-66H, 120 minutes for an NP-77, 140 minutes for NP-77H, and 60 minutes for an NP-55.
- The unit cannot be operated with the AC power adaptor when it is used for charging a battery pack, and the battery pack cannot be charged when the AC power adaptor is used to operate the unit.
- An NP-66H, NP-77, NP-55or NP-77H can also be charged with the BC-55 or AC-V55 battery charger/AC power adaptor.

To remove the battery pack



While sliding the BATT knob in the direction of the arrow, slide the battery pack as illustrated.

Operating time

A fully-charged battery pack can operate this unit as follows:

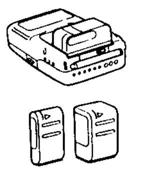
	LCD ON/OFF	NP-77H	NP-77	NP-66H	NP-55
Watching TV programs	ON	Approx. 130 min.	Approx. 110 min.	Approx. 100 min.	Approx. 55 min.
VTR playing back	ON	Approx. 120 min.	Approx. 100 min.	Approx. 90 min.	Approx. 50 min.
TV programme recording	ON	Approx. 95 min.	Approx. 75 min.	Approx. 70 min.	Approx. 40 min.
TV programme recording	OFF	Approx. 140 min.	Approx. 120 min.	Approx. 105 min.	Approx. 60 min.
Camera recording *	OFF	Approx. 100 min.	Approx. 80 min.	Approx. 75 min.	Approx. 40 min.

* When connecting the color video camera CCD-G100STE (not supplied).

Using the Battery Pack Efficiently

How to prepare the rechargeable battery packs

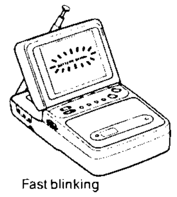
Have sufficient battery pack power to perform 2 or 3 times the amount of recording that you plan to do.
"Battery life" as indicated in the instruction manual or catalogue of the video TV recorder is measured by the continuous use of the video TV recorder, at room temperature, using a fully charged battery.
Fast winding or rewinding tape operations consumes much more battery power than normal tape transport operation. Consequently, battery life becomes shorter when these operations are performed frequently.



Battery life is shorter in a cold climate.
Cold climates reduce the efficiency of a battery and cause it to run out more quickly.

When to replace the rechargeable battery pack

When the battery pack is exhausted, the POWER lamp (during recording, the "BATTERY DOWN" indication on the screen as well) starts blinking slowly about five minutes before the battery pack is discharged. (When this happens, some of the indications may not appear on the screen.)
Replace the battery when the blinking changes from slow to fast, and the "BATTERY DOWN" indication starts blinking rapidly.
Turn off the power of the video TV recorder before replacing the battery. While replacing the battery, keep the cassette inside the cassette holder. When the battery has been replaced, recording can be resumed smoothly without any picture distortion.



Fast blinking

Notes on battery exhaustion when a camera is connected
When the battery is exhausted, the tally lamp (red) displayed in the viewfinder of the camera starts blinking, and the power goes off automatically. Replace the battery pack with a fully charged one when the blinking starts.

Notes on charging

Before using the battery pack, charge it sufficiently. A brand-new battery pack is not charged.
Recharge the battery pack when it is fully exhausted.
- If the operation is completed before the BATTERY DOWN indication on the screen or POWER lamp starts blinking, it is recommended that you discharge the battery pack by playing back a tape until BATTERY DOWN or POWER lamp starts blinking rapidly.
- Do not recharge the battery pack before it has been discharged completely. Repeated charging while some capacity remains will reduce the battery capacity. However, the original battery capacity can be recovered if you fully discharge and fully charge the battery pack again

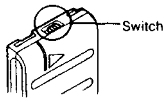
Keep the terminals clean

If the terminals (metal parts on the back) are soiled, the battery life will become shorter. When the terminals are soiled, or when the battery pack has not been used for a long time, repeatedly attach and remove it several times. This will improve the contact of the battery pack and the video TV recorder. Also, wipe the + and − terminals with a soft cloth or paper.

Notes on the rechargeable battery pack

Battery pack care
- Remove the battery pack from the video TV recorder after use, and keep it in a cool place. When the battery pack is installed on a video TV recorder, a small amount of current flows to the recorder even if the POWER switch is turned off. This causes overdischarge and, consequently, shortens the life of the battery.
- The battery pack is always discharging - even when it is not in use. Thus, the battery should be charged before each use.

How to use the switch on the battery pack
Use this switch as a reminder of the charging condition. Set the switch to the "no mark" position when the charging is completed. Set the switch to the "red mark" position when the battery has been discharged.



How many times can the battery pack be recharged
It can be fully charged and discharged about 500 times under normal temperatures. If the BATTERY DOWN indication blinks rapidly just after turning on the recorder, even though a fully charged battery pack has been installed, replace the battery pack with a brand new one.

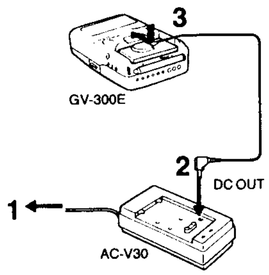
Charging temperature
Lower temperatures require a longer charging time.
Charging under a temperature ranging from 10°C to 30°C (50°F to 86°F) is recommended.

Why the battery pack heats up
While the battery pack is being charged or used, a chemical change occurs inside the battery pack which generates electric energy. Consequently, the battery pack becomes warm, but this is not dangerous.

Carrying the battery pack
If the + and − terminals are short-circuited with a piece of metal, the battery heat up abnormally. This is very dangerous. Never put an uncovered battery pack in a pocket together with a key holder or other metal object.

If the battery pack is not used for a long time (about 1 year)
Charge it again, but in this case the battery life will be shorter than normal. After several charging and discharging cycles, the battery life will recover its original capacity.

Using with AC Power Adaptor — AC-V30



1 Connect the AC power adaptor to a wall outlet.

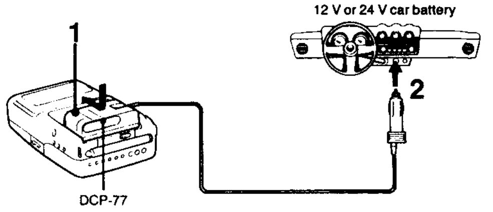
2 Insert into the DC OUT jack.

3 Align the left side of the connecting plate with the white line on the video TV recorder, and while pressing it, slide in the direction of the ▶ mark.

To remove the connecting plate
While sliding the BATT knob, slide out the connecting plate.

- The unit is not disconnected from the AC power source as long as it is connected to the wall outlet.
- While the unit is in use, particularly during charging, keep it away from AM receivers and video equipment because it will disturb AM reception and video operation.

Using This Unit with a Car Battery — DCP-77



1 Attach the DC pack to the video TV recorder.

2 Connect the plug to the cigarette lighter socket.

- Connect the DCP-77 only to a car with a negative ground car batteries of 12 V or 24 V.
- Attach or remove the DC pack in the same way as the battery pack.

Notes
- Be careful not to let any metal object touch the metal projection on the battery pack. When the battery pack is not used, keep it in its case.
- Keep the video TV recorder away from the power source. If not, noise may appear on the screen.

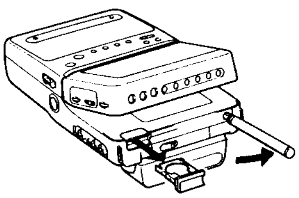
Notes on using this unit in a car
- For your safety, do not watch the TV or operate the controls while driving.
- Avoid leaving the unit in a place with very high temperatures. If you do, it may cause distortion of the cabinet or malfunction of the unit.
- If you use this unit while your car is not in use, the car battery will be consumed. Avoid using this unit in such condition for more than 12 hours.

Setting the Clock

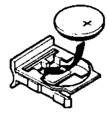
Before you set the clock, install a lithium battery. With a lithium battery installed, this unit powers the clock and keeps the last channel in memory when the power source is disconnected.

Inserting a Lithium Battery

1 Pull out the lithium battery compartment.

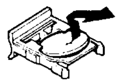


2 Install the supplied CR2032 lithium battery with the + side facing out.



3 Reinsert the compartment.

To remove the lithium battery
Press the battery upward and remove it as illustrated.



Lithium battery life

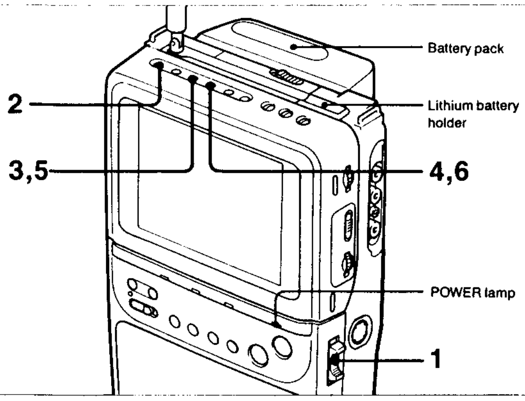
Approximately 1 year in normal operation.
If the lithium battery becomes weak, the 0 : 00 indication appears on the screen when the DATA SCREEN button is pressed, and the clock does not operate. In this case, replace the battery with a Sony CR2032 lithium battery. Use of another battery may present a risk of fire or explosion. After replacing the battery, reset the clock.

Cautions
- Keep the lithium battery out of the reach of children.
  Should the battery be swallowed, consult a doctor immediately.
- Before use, wipe the battery with a dry cloth to assure a good contact.
- Be sure to observe the correct polarity when installing the battery.
- Do not hold the battery with metallic tweezers, otherwise a short-circuit may occur.
- Do not break up the battery or throw it into a fire because it may explode. Carefully dispose of the used batteries.

Warning
Battery may explode if mistreated. Do not recharge, disassemble or dispose of in fire.

Setting the Clock

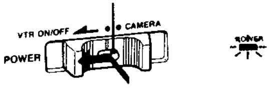
Before setting
Make sure that the power source is connected correctly.


Battery pack
Lithium battery holder
2
3,5
4,6
POWER lamp
1

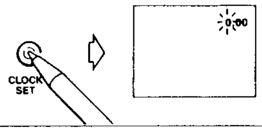
Example: Set to 13 : 15

1 **Turn the power on.**
The POWER lamp lights up.

While pressing the green button, slide the POWER switch to the left to turn the power on.

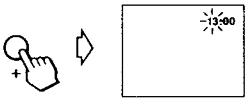

VTR ON/OFF
CAMERA
POWER
POWER

2 **Press the CLOCK SET button with a pen or similar object.**
The screen will enter the time setting mode.
The screen becomes dark.
The next item to be set blinks.

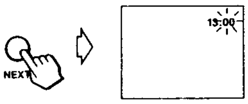

CLOCK SET
0:00

3 **Set the hour.**
Press the + button repeatedly until you get the desired setting.

If you keep the button pressed, the indication will advance continuously.

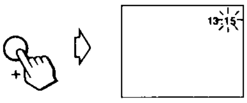


4 **Press the NEXT button.**

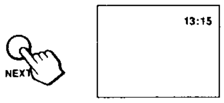


5 **Set the minute.**
Press repeatedly until you get the desired setting.

If you keep the button pressed, the indication will advance continuously.



6 **Press the NEXT button.**
The clock starts.
The screen goes back to the normal brightness.



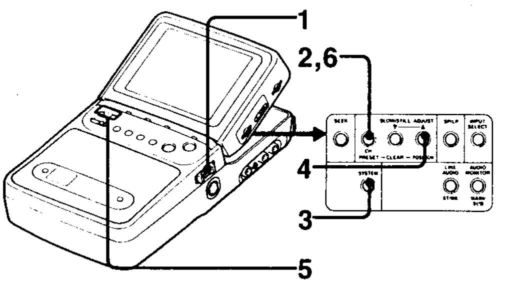
Note
If the lithium battery is not installed, the clock will go back to "0:00" each time the power source is disconnected.

Presetting TV Channels

Your receiver is capable of receiving VHF channels E2-E12, UHF channels 21-69, and CATV channels S01-S20. Up to 60 channels can be allocated to any desired programme position.

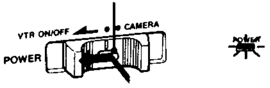
To Preset Channels

Before you start presetting, pull out the telescopic aerial or connect an external aerial.

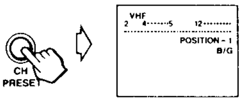


1 **Turn the power on.**
The POWER lamp lights up.
If the TV programme is not displayed, press the INPUT SELECT button.

While pressing the green button, slide the POWER switch to the left.


VTR ON/OFF
CAMERA
POWER
POWER

2 **Press the CH PRESET button.**


CH PRESET
VHF
2 4·······5 12·········
POSITION - 1
B/G

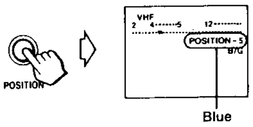
3 **Press the TV SYSTEM button to select the TV system in your area.**
The indication changes as follows:

B/G → I

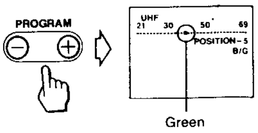
B/G: Other western European countries
I: UK/Ireland

Note
If the TV system is not selected correctly, the sound will be poor or noise may be heard.

4 **Press the POSITION button to select the desired programme position where the channel is to be stored.**

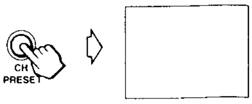

POSITION
VHF
2 4·······5 12·········
POSITION - 5
B/G
Blue

5 **Press the PROGRAM –/+ buttons repeatedly to select the channel to be stored.**
The UHF channel range is displayed after the VHF range*.
Repeat steps 4 and 5 for other channels to be preset.


PROGRAM
UHF
21 30 50 69
POSITION – 5
B/G
Green

6 **Press the CH PRESET button.**
Channel presetting is completed.

The on-screen display disappears.



Programme scanning on your video TV recorder
When the PROGRAM + button is pressed, the channels are scanned in the following order.
When the PROGRAM – button is pressed, the scanning order is reversed

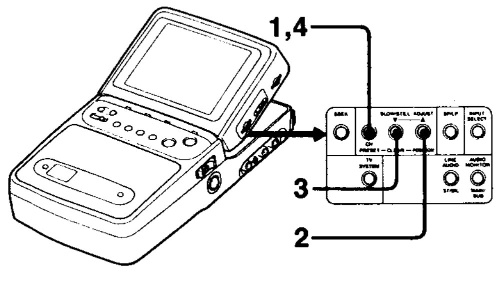
VHF (E2-E4) · CATV (S01-S10) · VHF (E5-E12) · CATV (S11-S20) · UHF (E21-E69)

* After the channel range is displayed, wait for about 2 seconds before next operation.

To change the order of the channel to be stored
Follow the above steps.

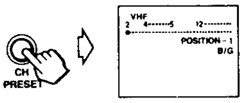
To Erase Channels

The erased programme position is skipped when you press the PROGRAM + / – button.

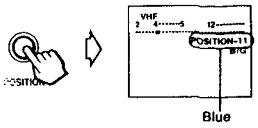


Example: To erase programme position 11

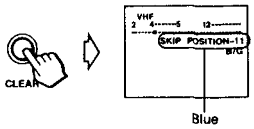
1 Press the CH PRESET button.


CH PRESET
VHF
2 4------5 12--------
POSITION - 1
B/G

2 Press the POSITION button and select the programme position to be erased.

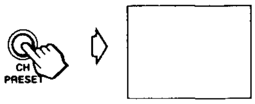

POSITION
VHF
2 4------5 12--------
POSITION-11
B/G
Blue

3 Press the CLEAR button.
The SKIP indication appears.


CLEAR
VHF
2 4------5 12--------
SKIP POSITION-11
B/G
Blue

Repeat steps 2 and 3 for other programme position to be erased.

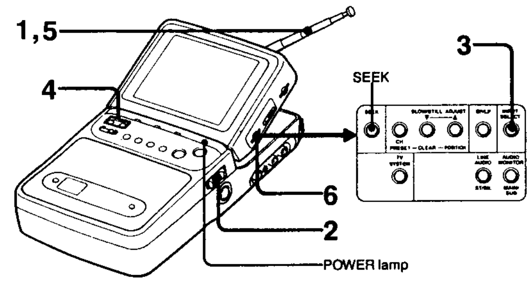
4 Press the CH PRESET button.
The on-screen display disappears.



To add the erased channels again
See "To Preset Channels" on page 22.

Note
Once you have pressed the CLEAR button to display the SKIP indication, make sure it remains displayed until the operation is completed. The indication may disappear depending on the reception condition. If this happens, press the CLEAR button once more to display the indication again.

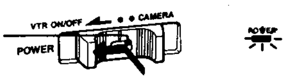
Watching TV Programmes


1,5
4
3
SEEK
6
2
POWER lamp

1 Pull out the aerial fully.
Be sure to pull out the base of the aerial.
If you have connected an external aerial or CATV cable, be sure to fold in the telescopic aerial.

2 Turn the power on.
The POWER lamp lights up.

While pressing the green button, slide the POWER switch to the left.

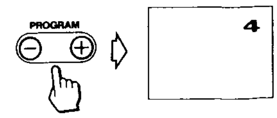

VTR ON/OFF
CAMERA
POWER

3 If a TV programme is not displayed, press the INPUT SELECT button.
The input mode will change as follows:

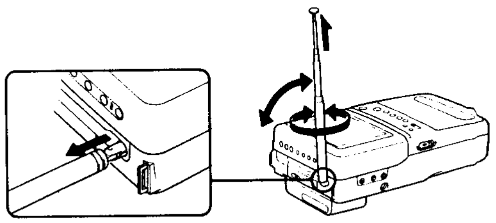
TV programme → LINE
↑ CAMERA ←

INPUT SELECT

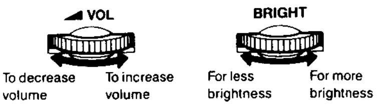
4 Select the desired programme.
Press + for higher-numbered programmes and – for lower-numbered programmes. The programmes will appear in numerical sequence. Press PROGRAM + / – repeatedly until you get the desired programme on the screen.



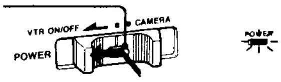
5 Adjust the aerial for the best reception.



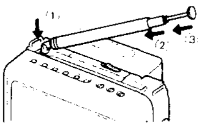
6 Adjust the volume and brightness.


VOL
BRIGHT
To decrease volume
To increase volume
For less brightness
For more brightness

To turn off the TV While pressing the green button, slide the POWER switch to the left. The POWER lamp goes out.


VTR ON/OFF
CAMERA
POWER

To put the aerial away
Slide in the base of the telescopic aerial first, then the center and the point.



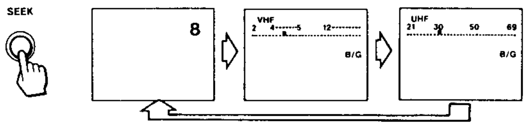
To View a TV Programme Without Presetting Channels

When you do not know the channel number of the TV programme you wish to view or if you want to use the unit in the moving car, search for the programme as follows.

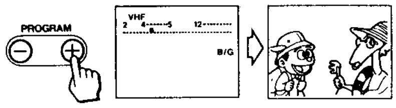
1 Press the SEEK button.
The channel range display appears.
Each time you press the button, the receiving channels changes as follows:

VHF → UHF → normal display

Note
To change the TV system, press the TV system button.



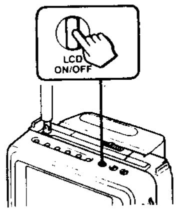
2 Press the PROGRAM + / – buttons to select the channel.



After selecting the channel, the channel range display goes out after a few seconds.

To mute (turn off) the picture

Press LCD ON/OFF button.
The screen will be muted.

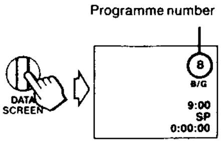


It is recommended to mute the picture when you view the playback picture with another TV or monitor. The picture noise of the TV or monitor is reduced. Battery life will also last longer if you use the unit with the picture turned off. To restore the picture on this unit, press LCD ON/OFF again.

Note
When no picture is displayed and the volume is low, or the earphones are connected, the unit appears to be turned off even though it is not. Be sure to turn off the unit with the POWER switch when it is not in use.

To display the programme number

Press the DATA SCREEN button.



To make the on-screen display disappear, press the DATA SCREEN button again.
After the SEEK button is pressed, the VHF or UHF channel range is displayed instead of the programme number, then goes off after a few seconds.

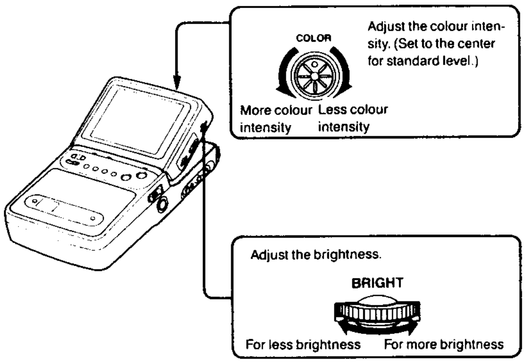
"Last channel" memory function

- While you are watching TV programmes, if the power source is disconnected or the battery pack becomes exhausted, the unit turns off with the last channel being memorized.
  When you turn on the unit again, the last channel appears on the screen.
  The lithium battery must be installed for this function.
- The last channel memory function also works when the TV signal is cut off, for example, when you go through a tunnel in a moving car.
- If the lithium battery becomes exhausted but the power source is connected, the last channel memory function will still operate.

Adjusting the Picture and Sound

Adjust the picture and sound to your preference.

To adjust the picture



Adjust the colour intensity. (Set to the center for standard level.)

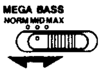
More colour intensity Less colour intensity

Adjust the brightness.

For less brightness For more brightness

To listen to the dynamic bass sound

MEGA BASS function
Used for listening to the sound with the stereo headphones.
Bass sound increases as you set the MEGA BASS switch from NORM to MAX.



Using the SLEEP Timer

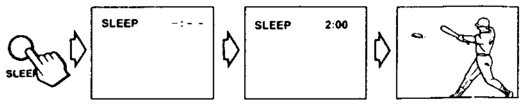
You can set the unit to turn off automatically after a certain amount of time, after as short as 30 minutes or as long as 5 hours, while viewing a TV programme, video playback, or while recording.
Each time you press the SLEEP button, the display will change as follows:

-:-- → 0:30 → 1:00 → 1:30 → 2:00 → 2:30
↑ ↓
5:00 ← 4:30 ← 4:00 ← 3:30 ← 3:00

Example: To turn off the TV after 2 hours

1 Make sure the clock is set correctly (page 18).
No indication will appear on the screen if the clock is not set.

2 Select the desired time interval by pressing the SLEEP button.

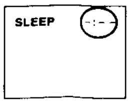


The screen becomes dark.
The normal display will be restored after a few seconds.

The TV will be turned off after 2 hours.
The procedure is the same for tape playback and recording. The tape will stop running after the selected time interval.

To cancel the SLEEP timer

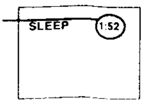
Press the SLEEP button repeatedly until the "-:--" display appears.
The SLEEP timer can also be canceled by turning off the unit with the POWER switch.



To check the remaining time

Press SLEEP once.
The remaining time is displayed.
The indication will go off after a few seconds.

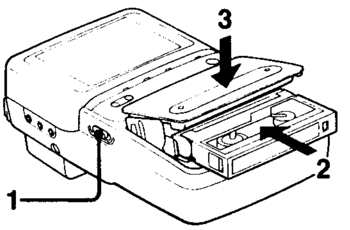
The unit will be turned off after about 1 hour and 52 minutes.



Note
When you use the unit with rechargeable batteries, the unit may turn off before the selected time because the batteries are exhausted.

Inserting a Cassette

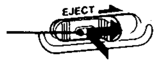
Make sure that the power source is connected to the unit.



To insert a cassette

1 Open the cassette holder with the EJECT button.

While pressing, slide the button to the right.



2 Insert the cassette with the window side facing up.

3 Close the cassette holder.

When you slide the EJECT button, power is supplied and the cassette holder opens even if the power is turned off. When the cassette holder opens, the power goes off automatically. Slide POWER if you want to continue operation.

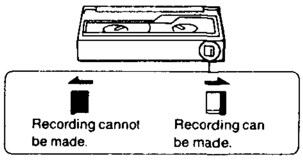
To eject a cassette

Slide the EJECT button. Make sure the tape is not running.

Note
Do not open the cassette holder while the unit is in the vertical position. If you do, the cassette may fall out of the holder and be damaged.

To Prevent Accidental Erasure

When a new recording is made on a previously recorded tape, the previous recording is automatically erased. To protect a recording, slide the red safety tab out to cover the opening.



Notes on opening and closing the cassette holder

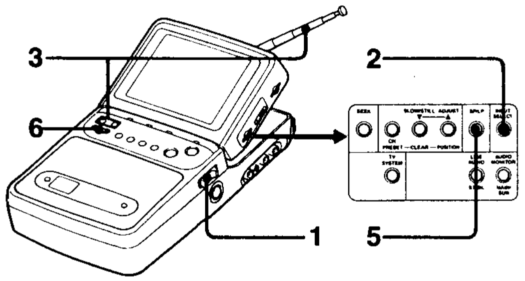
- Do not insert your finger into the cabinet when the cassette holder is open.
- Be careful not to get your finger caught in the cassette holder.

Notes on the cassette

- Store cassettes in their cases when they are not being used and keep them in an upright position to prevent intrusion of dust and uneven winding.
- Always insert the cassette in the correct position.
- Never insert anything in the small holes on the rear of the cassette.
- Remove the cassette from the video TV recorder when not in use.

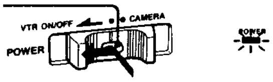
Recording TV Programmes

You can record a TV programme while viewing it. For optimal picture and sound quality, connecting an external aerial is recommended. (See page 45.)



1 Turn the power on.
The POWER lamp lights up.

While pressing the green button, slide the POWER switch to the left.



2 If the TV programme is not displayed, press the INPUT SELECT button.

The input mode will change as follows:

TV programme → LINE → CAMERA → TV programme

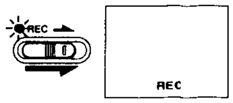
INPUT SELECT

3 Select the desired TV channel. (See page 27.)
Adjust the telescopic aerial for the best reception. (See page 27.)

4 Insert the cassette. (See page 32.)

5 Select the recording mode, SP or LP.
The recording time of a cassette in the LP mode is twice as long as that in the SP mode. For better picture and sound quality, set to SP.

6 Slide the REC switch to the right.
Recording starts.



To stop recording for a moment
Press ❚❚.

To resume recording
Press ❚❚ again.
(If the ❚❚ button is not pressed again for about 5 minutes, the pause mode will be released automatically and the unit will stop. This is to protect the video heads.)

To stop recording
Press □.

When the tape is recorded to the end
The tape stops automatically, but the unit is not turned off. If you are not going to continue operation, turn the power off with the POWER switch.

About the recorded sound
The VOL control setting has no effect on the recording level.

Changing the channel during recording

Set the unit in the recording pause mode and then select another channel. You cannot watch another programme while recording.

When recording from the beginning of a tape

Run the video TV recorder for about 15 seconds at the beginning of a cassette before recording. This will prevent missing the starting point or having any previously recorded pictures appear when playing back on another video cassette recorder.

Recording/playback time

Two tape speeds can be selected with the SP/LP selector.
The recording time in the LP mode is twice as long as that in the SP mode. For better picture and sound, recording in the SP mode is recommended. During playback, the mode in which the tape was recorded is selected automatically.

Cassettes and their recording time

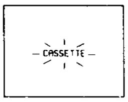
There are two formats for 8mm video recording, PAL and NTSC. Video cassette tapes are made to correspond to one of these formats. Use PAL format cassette tapes for this unit. You will find "P5" on the package of PAL cassettes.
In some countries, however, only NTSC format cassette tapes with "P6" on the packages are available. If a NTSC format cassette is used with this unit, the actual recording time may differ from the recording time indicated on the cassette.

Note
If you record with this unit on a tape that has been recorded in the PCM mode, and if you play back this tape on a VTR with PCM function, the sound may be cut off occasionally. In this case, set the audio monitor switch of the VTR to the standard position.

To stop recording automatically after a certain time — Quick timer

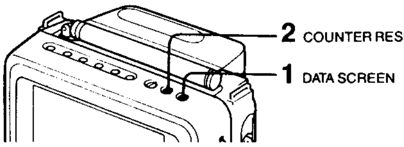
Press the SLEEP button during recording. You can leave the unit function when you go to bed or when you go out, etc.
The unit will be turned off automatically at the preset time. For operation, see page 31.

Are you having trouble?

Symptom	Possible cause	Correction
"CASSETTE" indication is displayed when you slide the REC switch. 	The safety tab on the cassette is slid out.	Slide the tab in or use a new cassette.
	The tape is at its end.	Rewind the tape or use a new cassette.
	No cassette is inserted.	Insert a cassette.

Using the Tape Counter

During recording or playback, the digits on the counter indicate the actual recording or playback time.
By noting the counter reading at a particular point, you can easily find that point later by referring to the tape counter.

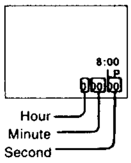


1 **Press DATA SCREEN so that the counter is displayed.**

DATA SCREEN

2 **During recording or playback, press COUNTER RESET at the point you later want to locate.**
The counter will be set to 0:00:00.

COUNTER RESET



Use the counter to find this point later.

Notes
- The counter reading and the point on the tape may not correspond exactly. Use the counter as a guide.
- There will be a time lag of several seconds on the counter reading after repeated fast-forward and rewind operations.
- There will also be a time lag of several seconds when a tape recorded in both the LP or SP modes or a tape having a blank portion between the recorded portions is played back.

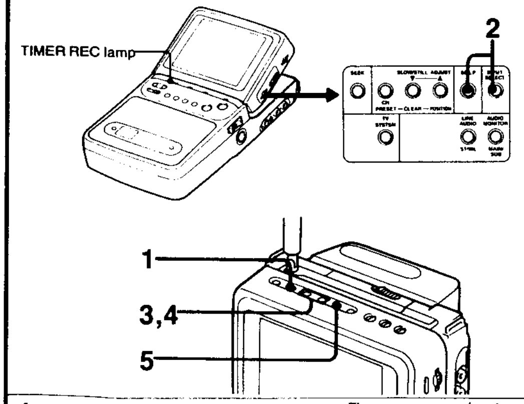
Using the Timer-Activated Recording Feature

By using the timer-activated recording feature, you can programme this unit to automatically record a TV programme that will be shown within 24 hours of activating the timer. For better recording of picture and sound, use of an external antenna is recommended. See page 45.

Before setting the timer

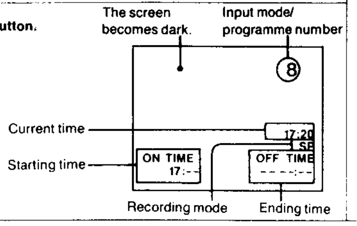
- Make sure that the power is supplied. (Is the battery pack fully charged? For long recording, use of the AC power source is recommended.)
- Set the clock (see page 18.)
- Insert a cassette (see page 32.) Make sure that the safety tab is slid in.

Example: To record the programme from 20:30 to 21:45.

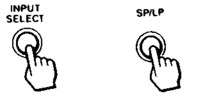


1 **Press the TIMER SET/CHECK button.**

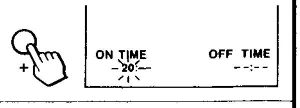
TIMER SET/CHECK



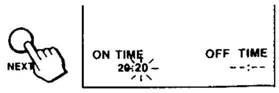
2 **Select the input mode with the INPUT SELECT button, and the recording mode with the SP/LP button.**
For TV programme recording, select the desired channel.



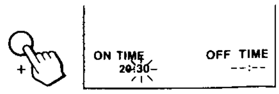
3 **Set the time for the recording to begin.**
1) Press the + button to set the hour.
Each time you press the + button, the hour indication increases by one. If you keep the button pressed, the indication will increase continuously.



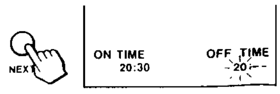
2) Press the NEXT button.



3) Press the + button to set the minutes.
Each time you press the + button, the minutes indication increases by one.
If you keep the button pressed, the indication will increase continuously.

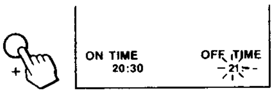


4) Press the NEXT button.
The starting time is now set.

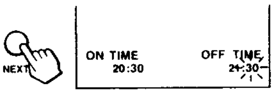


4 Set the time for the recording to stop.

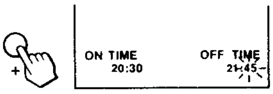
1) Set the hour with the + button.


+
ON TIME
20:30
OFF TIME
21:--

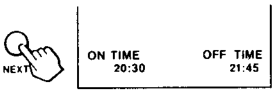
2) Press the NEXT button.


NEXT
ON TIME
20:30
OFF TIME
21:30

3) Set the minute with the + button.

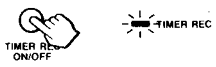

+
ON TIME
20:30
OFF TIME
21:45

4) Press the NEXT button.
The ending time is now set. The on-screen display disappears.


NEXT
ON TIME
20:30
OFF TIME
21:45

If you have made a mistake
Turn the power off, then on again. Repeat steps from 1 to 4.

5 Press the TIMER REC ON/OFF button.
The power goes off and the TIMER REC lamp lights up (timer recording standby mode). The recording starts automatically at the preset start time and the power goes off at the preset end time.


TIMER REC ON/OFF
TIMER REC

Notes

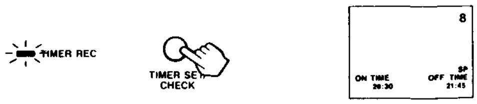
- During timer recording, both picture and sound will be muted. To listen to the sound and watch the picture, press the LCD ON/OFF button.
- When you press the TIMER REC ON/OFF button, the "CASSETTE" indication will appear if the safety tab on the cassette is slid out or if no cassette is inserted.

To stop the timer recording

Press the TIMER REC ON/OFF button again.
The TIMER REC lamp goes out.

To check the setting

Press the TIMER SET/CHECK button while the TIMER REC lamp is lit.
The power is turned on and the starting and ending time is displayed for a few seconds.


TIMER REC
TIMER SET CHECK
8
SP
ON TIME
20:30
OFF TIME
21:45

To change the timer setting after completing the setting

Press the TIMER REC ON/OFF button to cancel the timer recording mode, then turn the unit on and set the timer again.

To set the timer while the tape is running

Only the starting and ending time can be set during playback or recording. After stopping the tape, set the recording mode (SP/LP) and programme number, and then press the TIMER REC ON/OFF button.

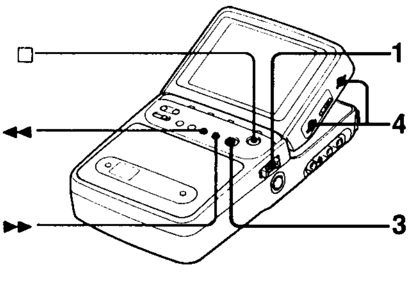
If a power interruption occurs when the unit is connected to the AC power source

Recording stops. Recording starts again after the power is resupplied. When a power interruption occurs during the timer recording standby mode and the power is resupplied, the timer settings will not be affected as long as the lithium battery is installed.

To record to the end of the tape

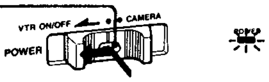
Set the starting and ending time the same. When the tape reaches the end, recording will stop and the power goes off.

Playing Back the Recorded Tapes



1 Turn the power on.
The POWER lamp lights up.

While pressing the green button, slide the POWER switch to the left.


VTR ON/OFF
CAMERA
POWER
POWER

2 Insert a recorded tape (see page 32.)

3 Press ▷ to start playback.

4 Adjust the volume and the brightness.

VOL
BRIGHT
To decrease volume
To increase volume
For less brightness
For more brightness

To stop playback Press the □ button.
To rewind the tape Press the ◀◀ button.
To advance the tape Press the ▶▶ button.

To rewind the tape and play it back automatically — Auto play

While pressing the ◀◀ button, press the ▷ button.
The "AUTO PLAY" indication appears.

To mute the picture

Press the LCD ON/OFF button. To restore the picture, press the LCD ON/OFF button again.

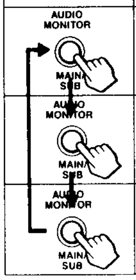
To adjust the picture

Adjust the BRIGHT and COLOR controls (see page 30.)

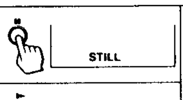
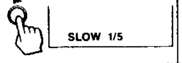
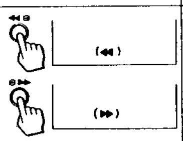
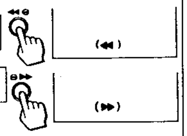
To stop playback at the desired time

Use the SLEEP function.
The unit goes off at the preset time. (see page 31.)

To playback the tape recorded in stereo or bilingual mode

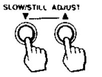
AUDIO MONITOR	Stereo		Bilingual	
	Display	Sound	Display	Sound
 AUDIO MONITOR MAIN/SUB	(S)	Stereo (To listen to the stereo sound, use the earphones)	MAIN	MAIN
	(S) L	Left channel	SUB	SUB
	(S) R	Right channel	MAIN+SUB	MAIN+SUB

Various Playback Modes — CRYSTAL-CLEAR still/slow/picture search

To stop the tape for a moment — Still picture	During playback 	To resume normal playback, press ▷. These modes will be automatically released after the following time intervals: Still: 5 minutes Slow *: 1 minute.
To view the slow playback picture	During playback 	
To locate a particular point while viewing the picture — Picture search	During playback During playback 	When you release the button, the unit will return to the previous mode.
To view the picture at high speed — FR picture search	While rewinding While fast forwarding 	

* After normal playback is resumed, the ▮▶ button will not function for about 5 seconds.

If streaks appear in the still and slow playback mode



Adjust the picture as follows:

1 **Play back the slow motion picture.**
2 **Press the SLOW/STILL ADJUST ▼, ▲ buttons to adjust the picture so that the noise does not appear.**

To adjust the upper portion of the picture, press the ▲ button. To adjust the lower portion of the picture, press the ▼ button. The still picture is adjusted at the same time.

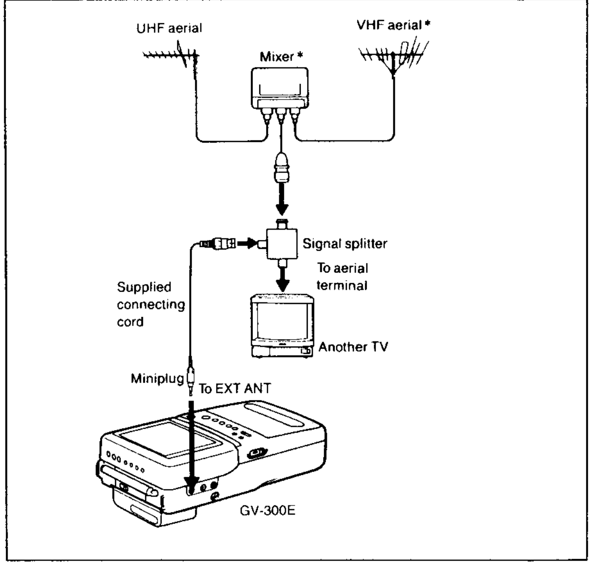
When the playback picture is viewed on another TV or monitor

The horizontal bands appear in the still, slow, picture search and FR picture search modes. Noise appears in the still and slow modes. To reduce the horizontal bands, press LCD ON/OFF button to mute the picture of this unit.

Notes on the CRYSTAL-CLEAR still/slow/picture search on LCD
Noiseless pictures can be viewed in the still, slow and picture search modes, owing to the characteristics of the liquid crystal.

Connecting an Outdoor Aerial

If you cannot obtain satisfactory reception with the telescopic aerial, or when recording TV programmes, use an outdoor aerial.



* The mixer and the VHF aerial are not necessary in the United Kingdom as only UHF is available.

Notes

- Before connecting the aerials, turn off the unit.
- Make connections firmly. A loose connection may cause a distorted picture.
- When using the unit in a car, use a commercially available car aerial, etc. For details, refer to the instruction manual of the car antenna.

Connecting other VTRs or Monitors

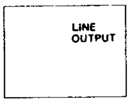
Notes on the VIDEO/AUDIO IN/OUT Jacks

The VIDEO/AUDIO IN/OUT jacks are automatically set to the input or output jacks according to the operating condition of the unit.

Refer to the following diagram:

Mode selected with INPUT SELECT button	Stop or recording mode	Playback mode
TUNER (TV program)	output	output
LINE *	input	output
CAMERA	output	output

* When the LINE mode is selected with INPUT SELECT, the INPUT or OUTPUT indication appears with LINE.

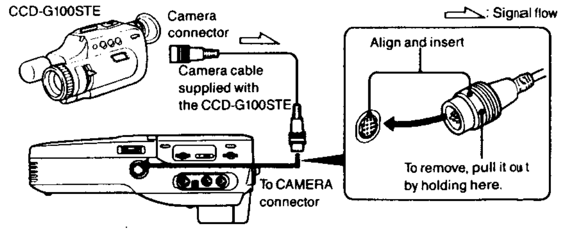


Note
When the LINE OUT jacks of other equipment are connected to the VIDEO/AUDIO IN/OUT jacks on this unit, and signals are output from the jacks of the other equipment to this unit, the picture and sound of the other equipment may be distorted.
In such case, turn off the power of this unit or disconnect the other equipment.

Camera Recording — Controlling from the Camera

By connecting an optional Video Camera CCD-G100STE, stereo recording controlled from the camera is possible. You can hold the camera and keep this unit in a carrying case while recording.
For details, refer to the instruction manual of the video camera.

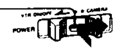
Connection


CCD-G100STE
Camera connector
: Signal flow
Align and insert
Camera cable supplied with the CCD-G100STE
To CAMERA connector
To remove, pull it out by holding here.

- Select the recording mode (SP/LP).

Recording with CCD-G100STE

1 Set the POWER switch of this unit to CAMERA.
While pressing the green button, slide to the right.



2 Insert the cassette

3 Set the STANDBY switch of the camera to STANDBY.
The power of this unit is turned on, and the POWER, STEREO lamp light up. To have the picture on the screen of this unit, press LCD ON/OFF button.

4 Start recording.
Press the START/STOP button of the camera.

To stop recording for a moment
Press the START/STOP button. Press it again to start recording.

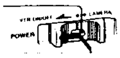
To stop recording
Set the STANDBY switch to LOCK.

For CCD-G100E
Operation is the same as CCD-G100STE. However, since the microphone of the CCD-G100E is monaural, the sound is recorded in monaural although the STEREO lamp of GV-300E lights up.

For CCD-G1E
CCD-G1E can be connected to this unit. However only recording/recording pause mode switching can be controlled on the camera. Power on/off and recording stop can be controlled only on GV-300E. The sound will be recorded in monaural although the STEREO lamp of this unit lights up.

Playing back the newly recorded pictures

1 Turn the power on of this unit.
The POWER lamp lights up.
While pressing the green button, slide to the left.



2 Press ◀◀ button of this unit to rewind the tape.

3 Press II button of this unit.

4 Press ▷ button of this unit.

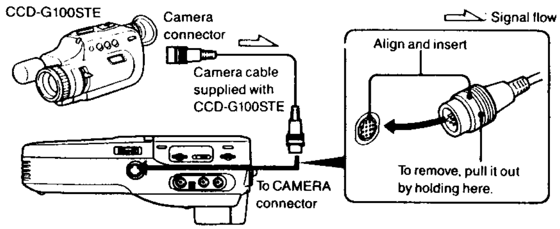
Caution
Do not operate this unit for a long time when it is in a carrying case like the one supplied. Internal heat build-up may occur which can cause this unit to malfunction.

When the POWER switch is set to CAMERA, the operable buttons are:
POWER switch, EJECT button, LCD ON/OFF button, DATA SCREEN button, COUNTER RESET button, and SP/LP button.

Camera Recording — Controlling from This Unit

By connecting the optional video camera CCD-G100STE, it is possible to record with this unit while using the camera in a distant place. For details, refer to the instruction manual of the video camera.

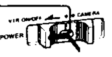
Connection


CCD-G100STE
Camera connector
Signal flow
Align and insert
Camera cable supplied with CCD-G100STE
To remove, pull it out by holding here.
To CAMERA connector

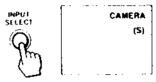
- Select the recording mode (SP/LP)

Recording

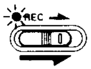
1 Turn the power on of this unit.
The POWER lamp lights up.
While pressing the green button, slide the POWER switch to the left.



2 Press the INPUT SELECT button of this unit to display "CAMERA" on the screen.
The STEREO lamp lights up. The picture to be recorded appears on the screen. If the focus or colour need adjustments, adjust them on the camera. To have the picture disappear, press the LCD ON/OFF button.



3 Slide the REC switch of this unit.
Recording starts.



To stop recording for a moment
Press II button of this unit.

To stop recording
Press ' button of this unit

You can also use the CCD-G100E and CCD-G1E however the sound will be recorded in monaural

Playing back the newly recorded pictures

1 Press ◀◀ button to rewind the tape.

2 Press II button.

3 Press ▷ button.

Recording with a camera from a distant place

Use the optional pan tilter HVR-200 for camera recording from a distant place, a maximum distance of 5m.

To listen to the sound that is being recorded
While recording, no sound is heard from the speaker. Connect the supplied stereo earphones to PHONES jack to listen to the sound.

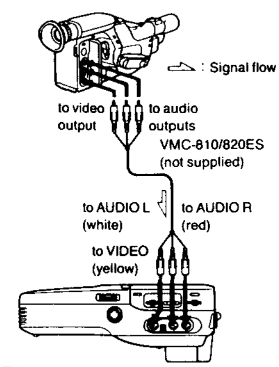
To use a camera with the timer-activated recording feature
This feature allows you to record a desired activity at a designated time, for example, a train passing by at a certain time. To set the timer, see page 38. The recording will start automatically at the time you set.

Using This Unit as a 8mm Video Camera Recorder Monitor

With the following connection, you can view pictures being recorded by the connected video camera recorder. Also you can view the playback pictures from the video camera recorder on this unit.

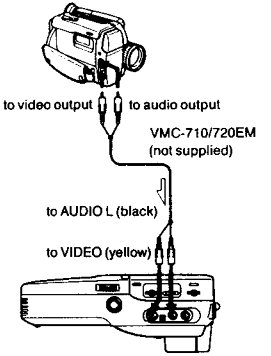
Connection

If the video camera recorder is stereo


: Signal flow
to video output
to audio outputs
VMC-810/820ES
(not supplied)
to AUDIO L (white)
to AUDIO R (red)
to VIDEO (yellow)

This unit operates in the stereo mode automatically.

If the video camera recorder is monaural


to video output
to audio output
VMC-710/720EM
(not supplied)
to AUDIO L (black)
to VIDEO (yellow)

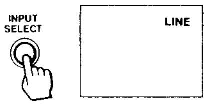
This unit operates in the monaural mode automatically.

Operation

1 Turn the power on.
The POWER lamp lights up.

While pressing the green button, slide the POWER switch to the left.

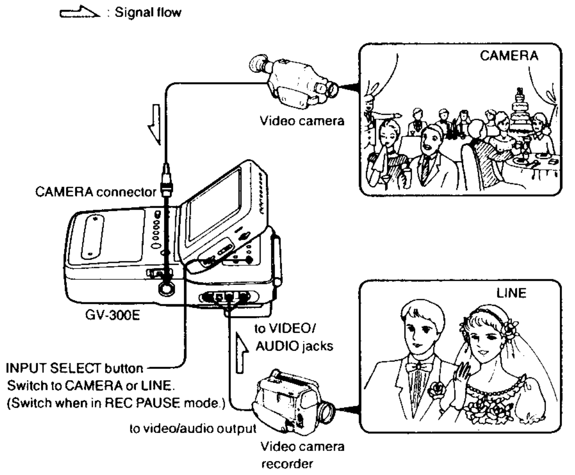
2 Press the INPUT SELECT button to display "LINE" on the screen.


INPUT
SELECT
LINE

3 Operate the video camera recorder.

When connecting both a video camera recorder and a video camera

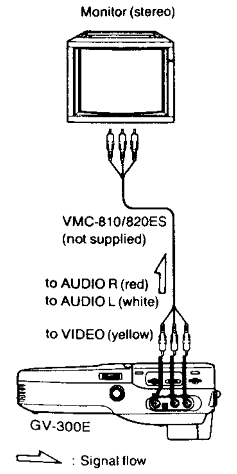
Set each unit to different angles, then, using the INPUT SELECT button, switch the picture to be recorded on this unit.

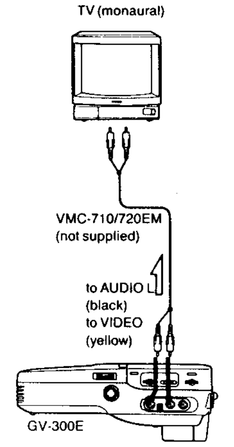

: Signal flow
CAMERA
Video camera
CAMERA connector
GV-300E
LINE
to VIDEO/AUDIO jacks
INPUT SELECT button
Switch to CAMERA or LINE.
(Switch when in REC PAUSE mode.)
to video/audio output
Video camera recorder

To Connect Another TV or Colour Monitor

If you connect this unit to another TV or colour monitor, you can view the playback pictures or the selected TV program on a larger screen and listen to the dynamic sound.
In this case, mute the picture of GV-300E by pressing the LCD ON/OFF button to reduce horizontal bands and noise in the picture of the TV or color monitor during various playback modes.

To connect a TV/monitor with video and audio inputs

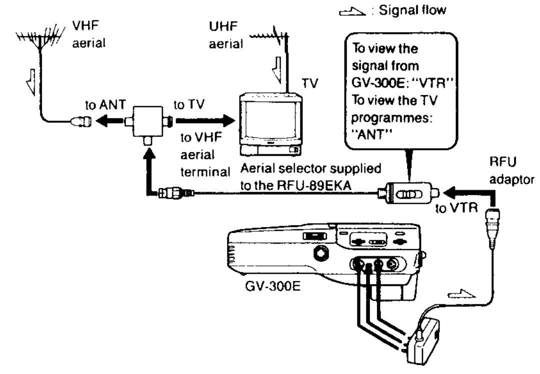

Monitor (stereo)
VMC-810/820ES
(not supplied)
to AUDIO R (red)
to AUDIO L (white)
to VIDEO (yellow)
GV-300E
: Signal flow


TV (monaural)
VMC-710/720EM
(not supplied)
to AUDIO L
(black)
to VIDEO
(yellow)
GV-300E

Note
When connecting only to the AUDIO L jack, the L and R sounds are automatically mixed and always output is monaural

To connect a TV without video and audio inputs

Use the RFU-89EKA RFU kit (not supplied).


: Signal flow
VHF aerial
UHF aerial
TV
To view the signal from GV-300E: "VTR"
To view the TV programmes: "ANT"
to ANT
to TV
to VHF aerial terminal
Aerial selector supplied to the RFU-89EKA
RFU adaptor
to VTR
GV-300E

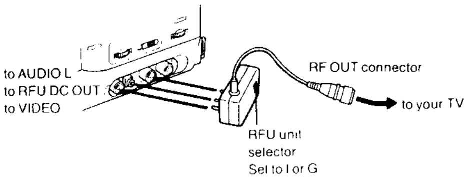
Note on the RFU-89EKA RFU kit

The RFU-89EKA includes the following accessories:
- RFU adaptor (1)
- Aerial selector (1)

Channel for VTR

To view the playback picture of this unit, set the RFU unit selector of the RFU adaptor according to the TV system of your country, then turn on the TV and select a programme position that is not used to receive a TV station

To connect the RFU adaptor

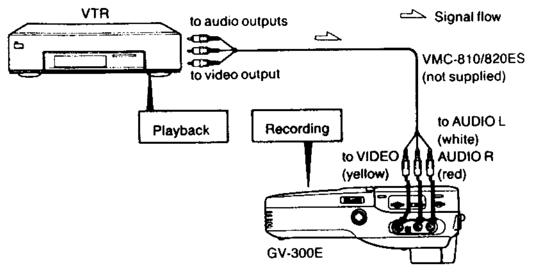

to AUDIO L
to RFU DC OUT
to VIDEO
RF OUT connector
to your TV
RFU unit selector
Set to I or G

Editing Tapes

You can edit tapes by connecting another VTR (8mm, Beta or VHS format) with video/audio input.

To Edit from Another VTR to This Unit

Connection


VTR
to audio outputs
to video output
Signal flow
VMC-810/820ES
(not supplied)
Playback
Recording
to AUDIO L
(white)
to VIDEO
(yellow)
AUDIO R
(red)
GV-300E

If the VTR to be connected has a monaural audio output only, use a commercially available connecting cord such as the VMC-710/720EM. In this case, connect to the AUDIO L and VIDEO jacks.

Operation

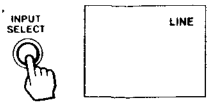
1 **Turn the power on.** The POWER lamp lights up.

While pressing green button, slide the POWER switch to the left.

POWER
CAMERA

2 **Insert the cassette.**

3 **Press the INPUT SELECT button so that the "LINE" indication appears.**


INPUT
SELECT
LINE

4 **Select the recording mode (SP/LP) by pressing the SP/LP button.**

5 **For playing back stereo or bilingual recorded tape, select the desired mode with the LINE AUDIO button. ***

6 **Play back the tape on another VTR and press the II (PAUSE) button at the point you want to start playing back.**

7 **Set this unit in the recording pause mode.**

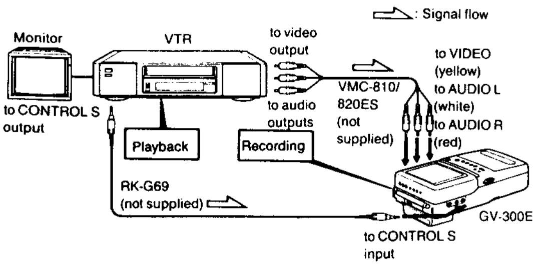
8 **Release the II (PAUSE) buttons on both units.**

9 **After editing is completed, press the ■ (STOP) buttons on both units to stop recording.**

* The signal is recorded in the selected mode. When playing back the recorded tape, the mode is selected automatically.

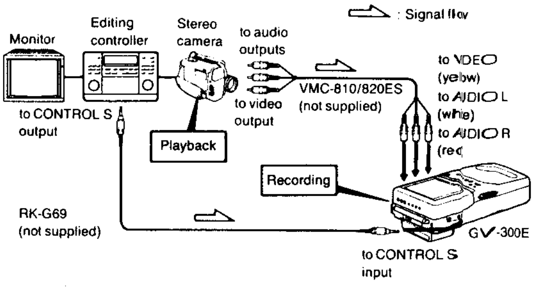
To edit from the VTR equipped with the CONTROL S output

Connect the CONTROL S input jack on this unit and the CONTROL S output jack on the other equipment.
Playback/pause on the other VTR and recording/pause on this unit can be operated simultaneously.


Signal flow
Monitor
VTR
to video output
to VIDEO (yellow)
VMC-810/820ES (not supplied)
to AUDIO L (white)
to audio outputs
to AUDIO R (red)
to CONTROL S output
Playback
Recording
RK-G69
(not supplied)
GV-300E
to CONTROL S input

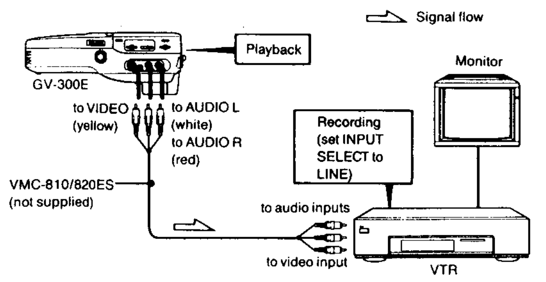
To edit with the editing controller

By connecting the editing controller, the recorder and player can be operated easily with the controller.


Signal flow
Monitor
Editing controller
Stereo camera
to audio outputs
to VIDEO (yellow)
VMC-810/820ES (not supplied)
to AUDIO L (white)
to AUDIO R (red)
to video output
to CONTROL S output
Playback
Recording
RK-G69
(not supplied)
GV-300E
to CONTROL S input

Note on an optional wireless remote control kit
When the receiver of the wireless remote control kit is connected to the CONTROL S jack on this unit, it can be controlled remotely. This set up makes it convenient to use this unit as the tuner of a color monitor.
When the unit is not in use, remove the receiver. If the receiver remains connected a very small amount of electric current flows.
For details, please read the instruction manual of the wireless remote control kit.

To Edit from This Unit to Another VTR



If the VTR to be connected has a monaural audio input only, use a commercially available connecting cord such as VMC-710/720EM. In this case, connect to the AUDIO L and VIDEO jacks.

To edit the tape recorded in bilingual mode
Select the output signal with the AUDIO MONITOR button. The signal is selected as follows:

	L output	R output	On-screen display
AUDIO MONITOR	MAIN	MAIN	MAIN
AUDIO MONITOR	SUB	SUB	SUB
AUDIO MONITOR	MAIN	SUB	MAIN+SUB

When only connected to L output (monaural)

	L output
AUDIO MONITOR	MAIN
AUDIO MONITOR	SUB
AUDIO MONITOR	MAIN+SUB

Precautions

Operation

- Operate the unit on 6.0 V (battery pack)/7.5 V (AC power adaptor)/6.5 V (DC pack DCP-77).
- For DC or AC operation, use the accessories supplied or recommended in this manual.
- Should any solid object or liquid fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Avoid rough handling or mechanical shock to the unit.
- Do not apply excessive force to the LCD.
- Remove and store video cassettes after recording or playback.
- Do not wrap up the unit and operate it because heat may build up internally.
- Avoid using and storing the recorder in the following locations:
  — Locations susceptible to vibration
  — Locations exposed to strong magnetic fields
  — Locations near TV or radio transmitters where strong radio waves are generated
- Do not place the unit on the sand.

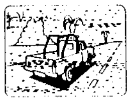
Care

- When the unit is not used for a long period of time, periodically turn on the power, operate the recorder and play back a tape for about three minutes.
- Clean the recorder body with a dry, soft cloth, or a soft cloth lightly moistened with a mild detergent solution. Do not use any type of solvent which may damage the finish.

Maintenance

Video Head Cleaning

To ensure a clear picture, clean the video heads periodically.
If playback pictures are noisy or hardly visible, the video heads may be contaminated. In this case, clean the video heads with the Sony V8-25CLH cleaning cassette (not supplied) according to the instructions.



Caution
Do not use commercially available wet-type cleaning cassettes. They may damage the video heads.

Note
If the V8-25CLH cleaning cassette is not available in your area, consult your Sony service facility.

If the Video Head is Damaged

When playback pictures are not clear even after using the cleaning cassette, the video head may be damaged. In this case, the video head needs to be replaced with a new one. Consult your Sony service facility for replacing the video head.

Note on the built-in lighting system

A built-in lighting system is assembled inside the liquid crystal screen of this unit. The life of the small fluorescent tube used for this built-in lighting system runs out over a period of use. If the lamp becomes dimmer or goes off immediately after you turn it on, even with new batteries, replace the lamp with a new one. To replace the lamp, consult the dealer where you purchased the unit, or a Sony service facility. The expected life of the small fluorescent tube is about three years if this unit is used for an hour each day. When you use this unit in a cold environment, the fluorescent tube will be dimmer at first. As soon as the temperature of the tube rises, it will regain its original brightness.

Note on the LCD

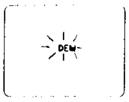
- Do not push the display forcibly.
- Do not operate the unit where the temperature is below 0°C (32°F) or above 40°C(104°F).
- If the unit is used in a cold place, a residual image may appear on the screen. This is not a malfunction of the unit.
- Constant bright points of light (red, blue, or green) may appear on the screen. This is not a malfunction of the unit.

Notes on Moisture Condensation

If this unit is brought directly from a cold place to a warm place, moisture may condense inside the unit or on the surface of the tape. If this happens, the tape may stick to the head drum, damaging both the tape and the unit. Although this unit is furnished with a moisture sensor to prevent possible damage from condensation, do not leave the tape inside the unit.

If moisture condenses inside the unit

The "DEW" indication appears on the screen.
In this case, no button will function except the EJECT button.
(However, if you have been watching a TV program, you can continue to do so.)
Eject the cassette, turn off the unit and leave the cassette holder open at least for an hour.



The unit can be used again if the DEW indication does not appear when one of the tape transport buttons is pressed.

Using Your Video TV Recorder Abroad

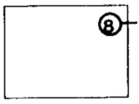
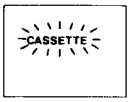
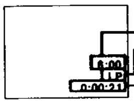
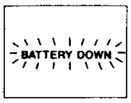
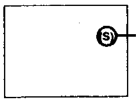
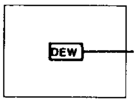
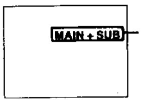
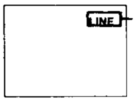
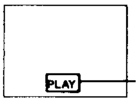
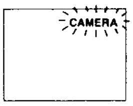
If you prepare fully charged battery packs and the supplied AC power adaptor (which can be used in all areas with a local power supply of 100 V-240 V), you can use your recorder in any country.

Each country has special TV color broadcast and electricity systems. This unit is designed to record and play back using the PAL colour video signals. Recording and playback of video sources based on other color systems cannot be guaranteed.

PAL system countries:
Australia, Austria, Belgium, China, Denmark, Finland, Great Britain, Holland, Hong Kong, Italy, Kuwait, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, Thailand, West Germany, etc.

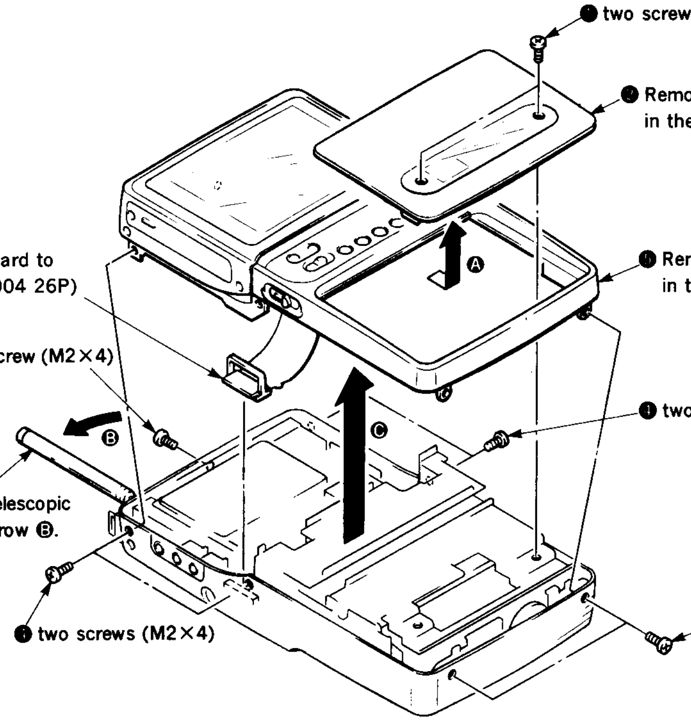
List of On-Screen Displays

The following indications appear on the screen indicating the operation condition and cautions.

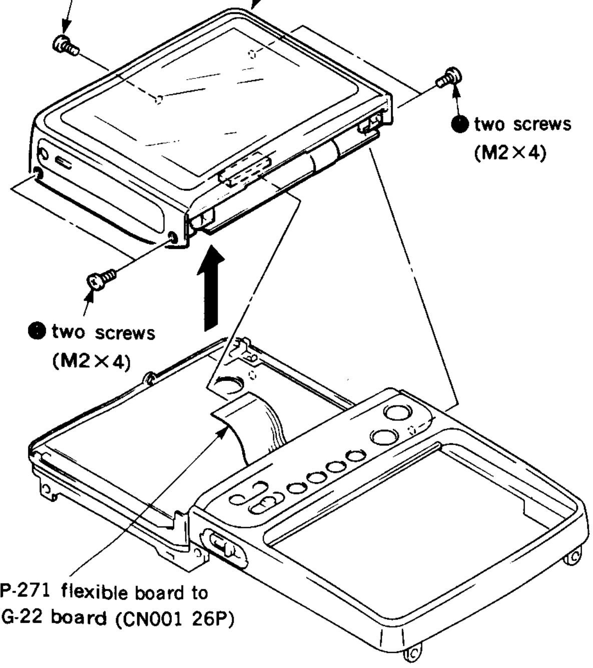
Indication	Meaning (reference page)	Indication	Meaning
	Programme number (page 27)		Caution for the cassette (page 36)
	Current time Recording mode (page 35) Counter (page 37)		Battery is exhausted (page 14)
	Stereo (page 43)		Moisture condensation (page 63)
	Bilingual (page 43)		Input from VIDEO/AUDIO jacks (page 46)
	Tape transport operation (page 42 ~ 44)		Input from CAMERA connector (page 50)

SECTION 2
DISASSEMBLY

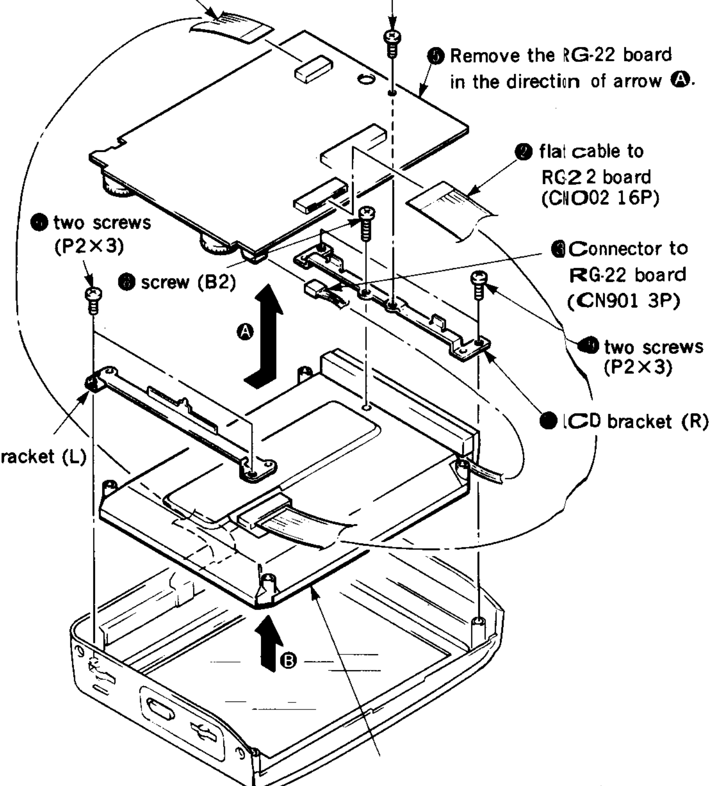
2-1. REMOVAL OF CABINET (UPPER) ASSY


● two screws (M1.7×5.5)
● Remove the lid assy, cassette compartment in the direction of arrow Ⓐ.
● FP-271 flexible board to SV-66 board (CN004 26P)
● Remove the cabinet (upper) assy in the direction of arrow Ⓒ.
● screw (M2×4)
● two screws (M2×4)
● Stand the antenna telescopic in the direction of arrow Ⓑ.
● two screws (M2×4)
● two screws (M2×4)
Ⓐ
Ⓑ
Ⓒ

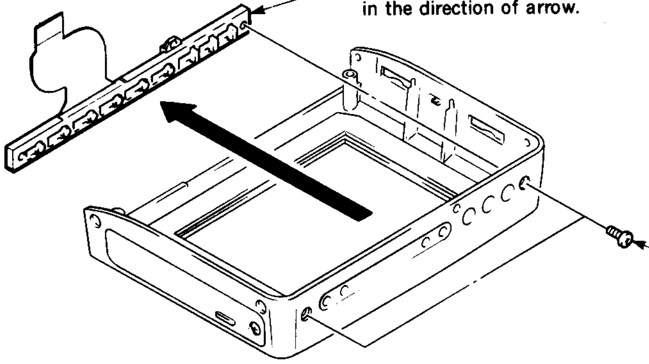
2-2. REMOVAL OF SC UNIT


● screw (M2×4)
● Remove the SC unit in the direction of arrow.
● two screws (M2×4)
● two screws (M2×4)
● FP-271 flexible board to RG-22 board (CN001 26P)

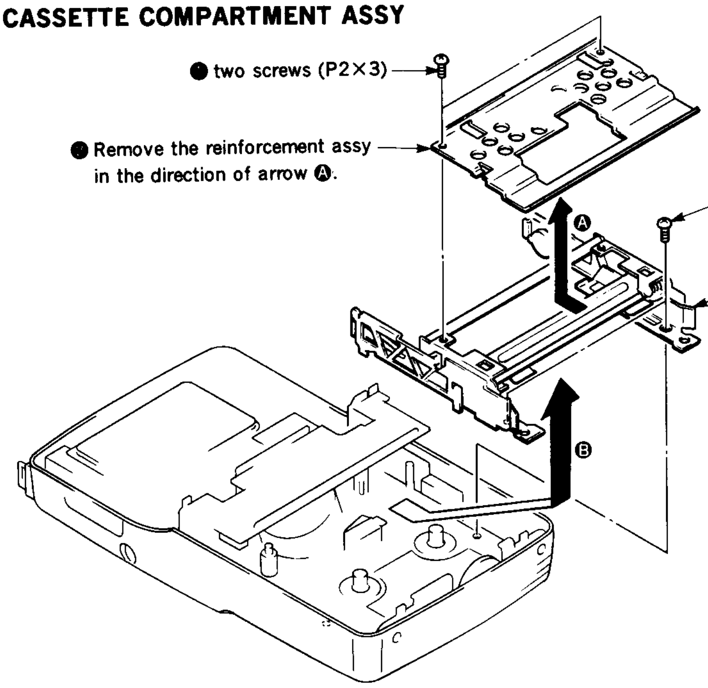
2-3. REMOVAL OF LIQUID CRYSTAL DISPLAY MODULE


● flexible to RG-22 board (CN501 60P)
● screw (P2×3)
● Remove the RG-22 board in the direction of arrow Ⓐ.
● flat cable to RG-22 board (CN002 16P)
● two screws (P2×3)
● Connector to RG-22 board (CN901 3P)
● screw (B2)
● two screws (P2×3)
● LCD bracket (R)
● LCD bracket (L)
● Remove the liquid crystal display module in the direction of arrow Ⓒ
Ⓐ
Ⓑ

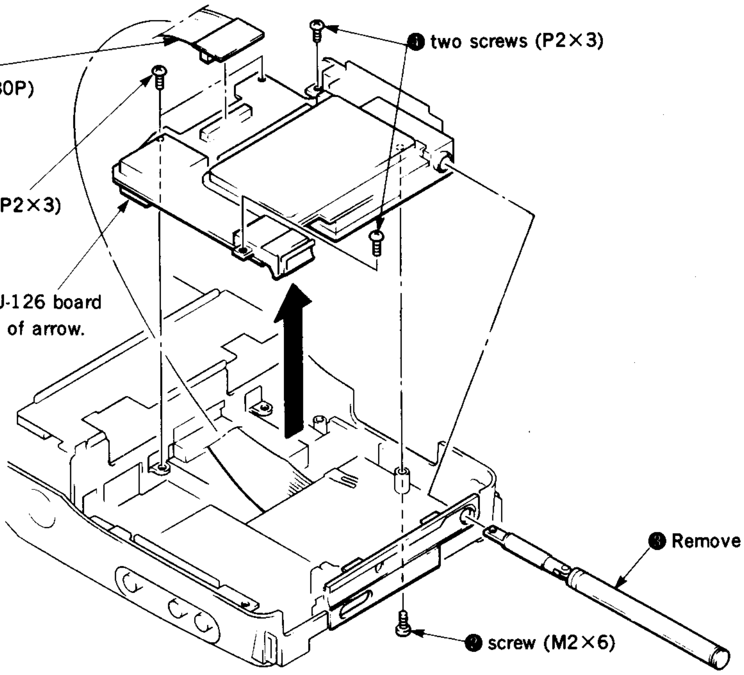
2-4. REMOVAL OF CONTROL SWITCH BLOCK


❷ Remove the switch block, control in the direction of arrow.
❶ two screws (M2×4)

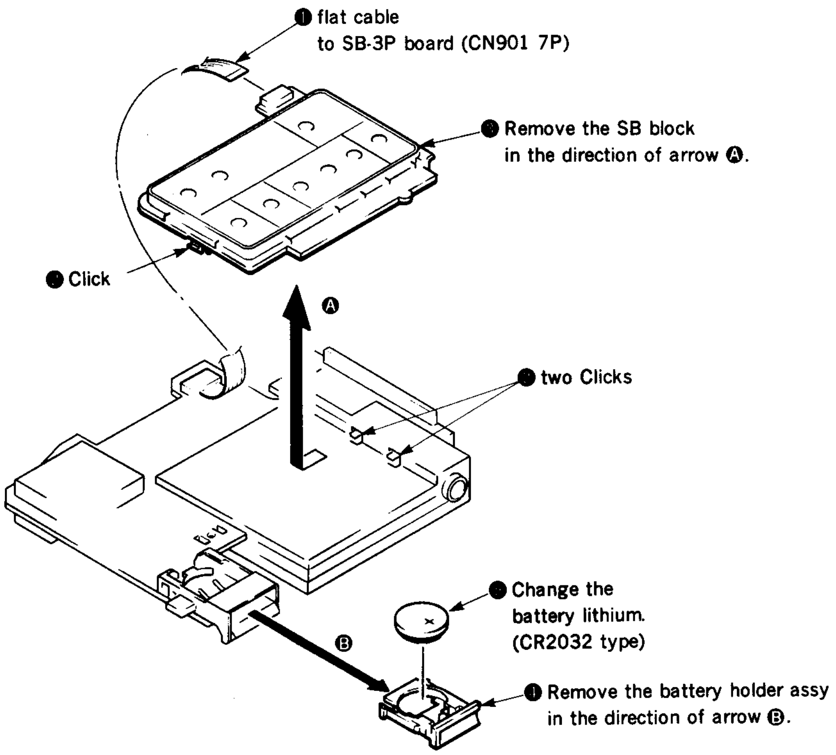
2-5. REMOVAL OF CASSETTE COMPARTMENT ASSY


❶ two screws (P2×3)
❷ Remove the reinforcement assy in the direction of arrow Ⓐ.
❸ two screws (P2×3)
❹ Remove the cassette compartment assy in the direction of arrow Ⓑ.
Ⓐ
Ⓑ

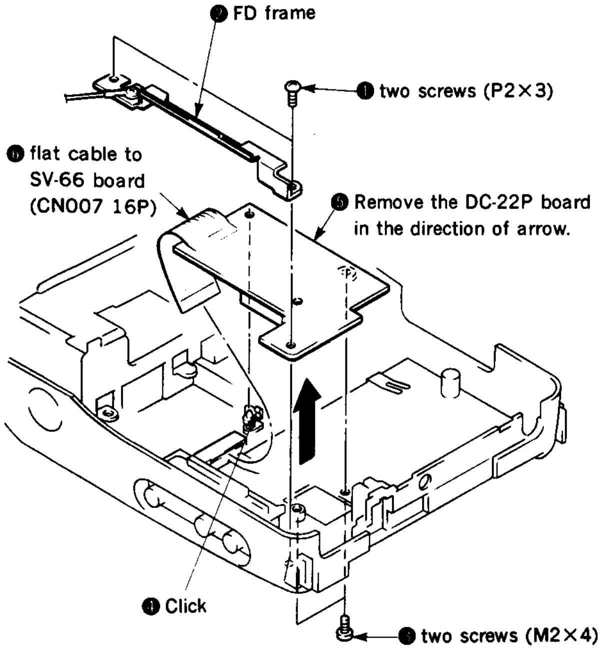
2-6. REMOVAL OF TU-126 BOARD


❶ flexible board to TU-126 board (CN001 30P)
❹ two screws (P2×3)
❹ two screws (P2×3)
❺ Remove the TU-126 board in the direction of arrow.
❸ Remove the antenna telescopic
❷ screw (M2×6)

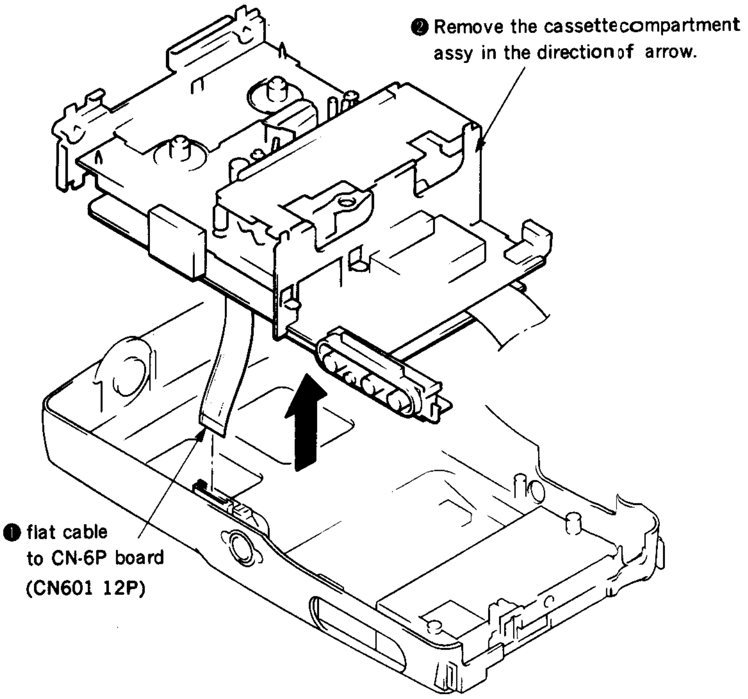
2-7. REMOVAL OF SB BLOCK AND LITHIUM BATTERY


❶ flat cable
to SB-3P board (CN901 7P)
● Remove the SB block
in the direction of arrow Ⓐ.
● Click
Ⓐ
● two Clicks
● Change the
battery lithium.
(CR2032 type)
Ⓑ
● Remove the battery holder assy
in the direction of arrow Ⓑ.

2-8. REMOVAL OF DC-22P BOARD


● FD frame
❶ two screws (P2×3)
❻ flat cable to
SV-66 board
(CN007 16P)
❺ Remove the DC-22P board
in the direction of arrow.
❹ Click
● two screws (M2×4)

2-9. REMOVAL OF MECHANISM DECK


❷ Remove the cassettecompartment
assy in the directionof arrow.
❶ flat cable
to CN-6P board
(CN601 12P)

2-10. INTERNAL VIEWS

— UPPER —

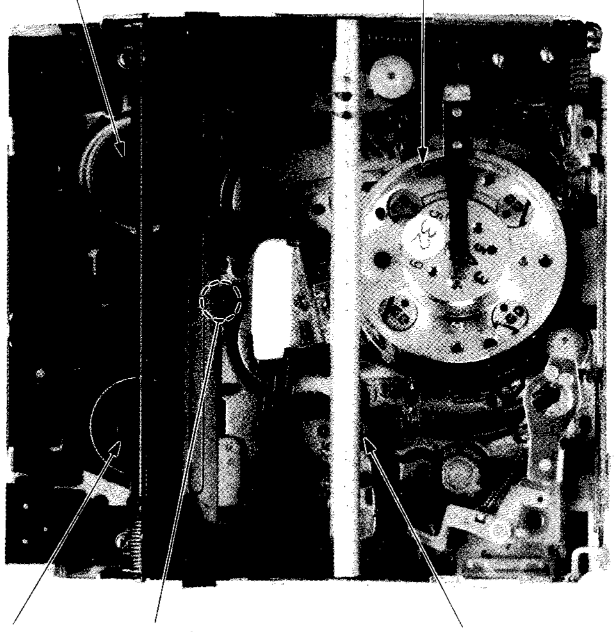
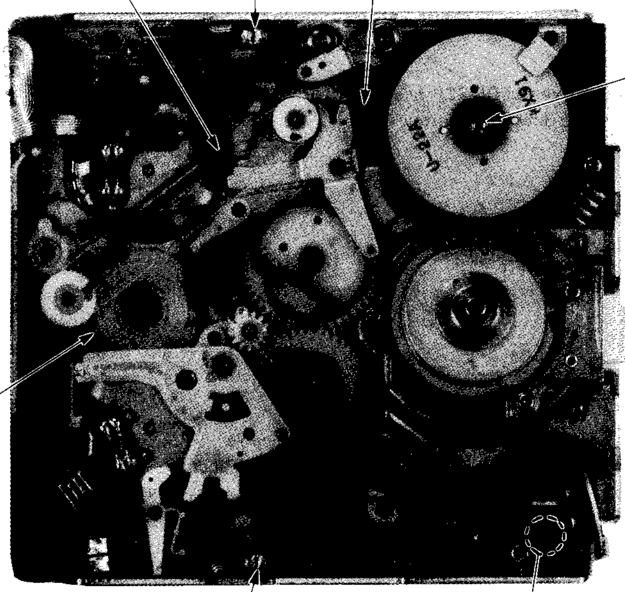


Table assy, reel, supply
X-3728-851-1
Table assy, reel, take-up
X-3728-855-1
Tape top/Tape end LED
(GL-452S)
8-719-940-81
ARM block assy, pinch
A-7040-219-A

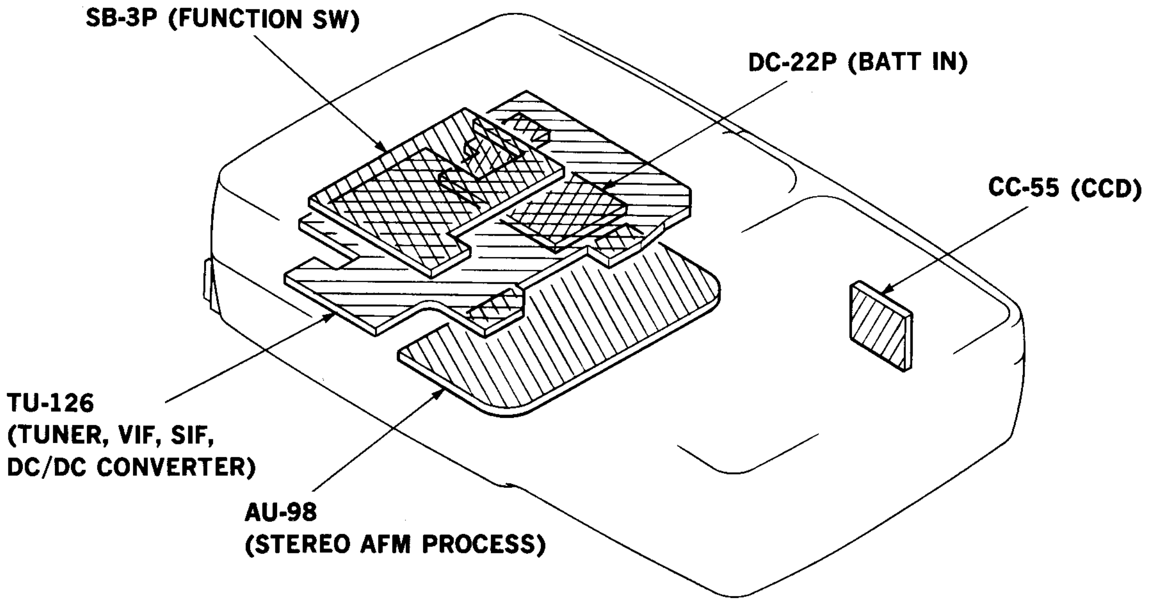
(DGU-61A-R) Drum Assy	A-7048-432-A
(DGR-61-R) Drum Upper	A-7049-360-A

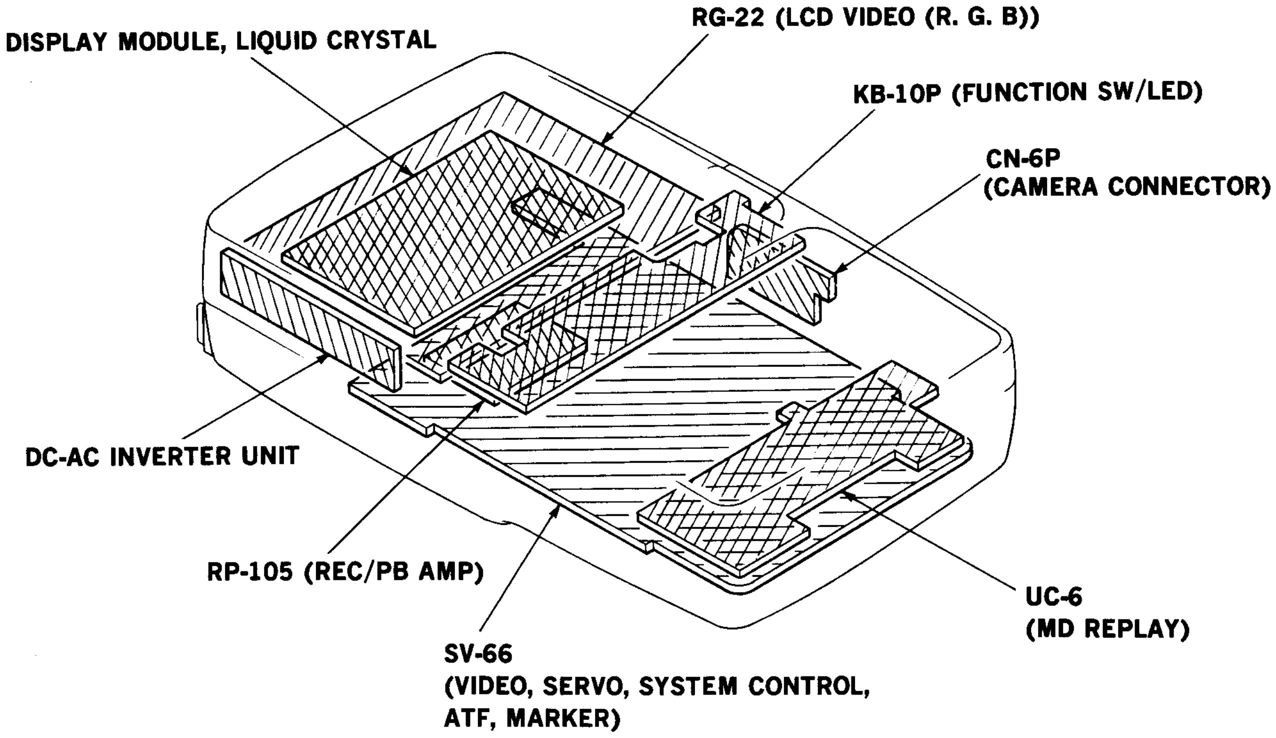
— LOWER —


Tape top sensor (EE-TP109)
8-729-906-48
Belt (L), timing
3-741-197-01
Belt (S), timing
3-728-866-11
Capstan motor (M902)
8-835-331-01
Gear assy, RK
X-3728-866-1
Tape top sensor (EE-TP109)
8-729-906-48
Loading motor assy (M903)
A-7040-208-A

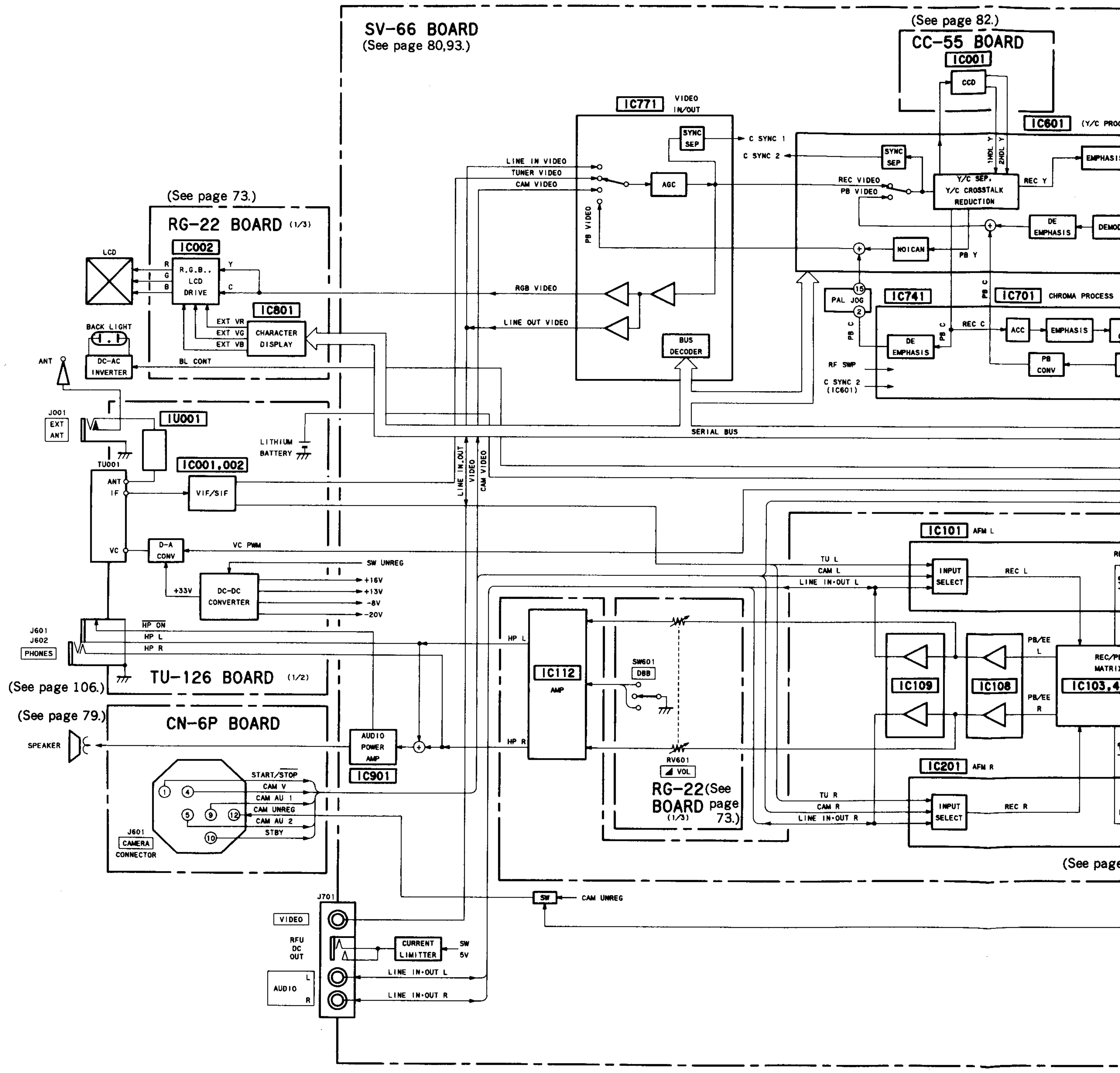
SECTION 3
DIAGRAMS

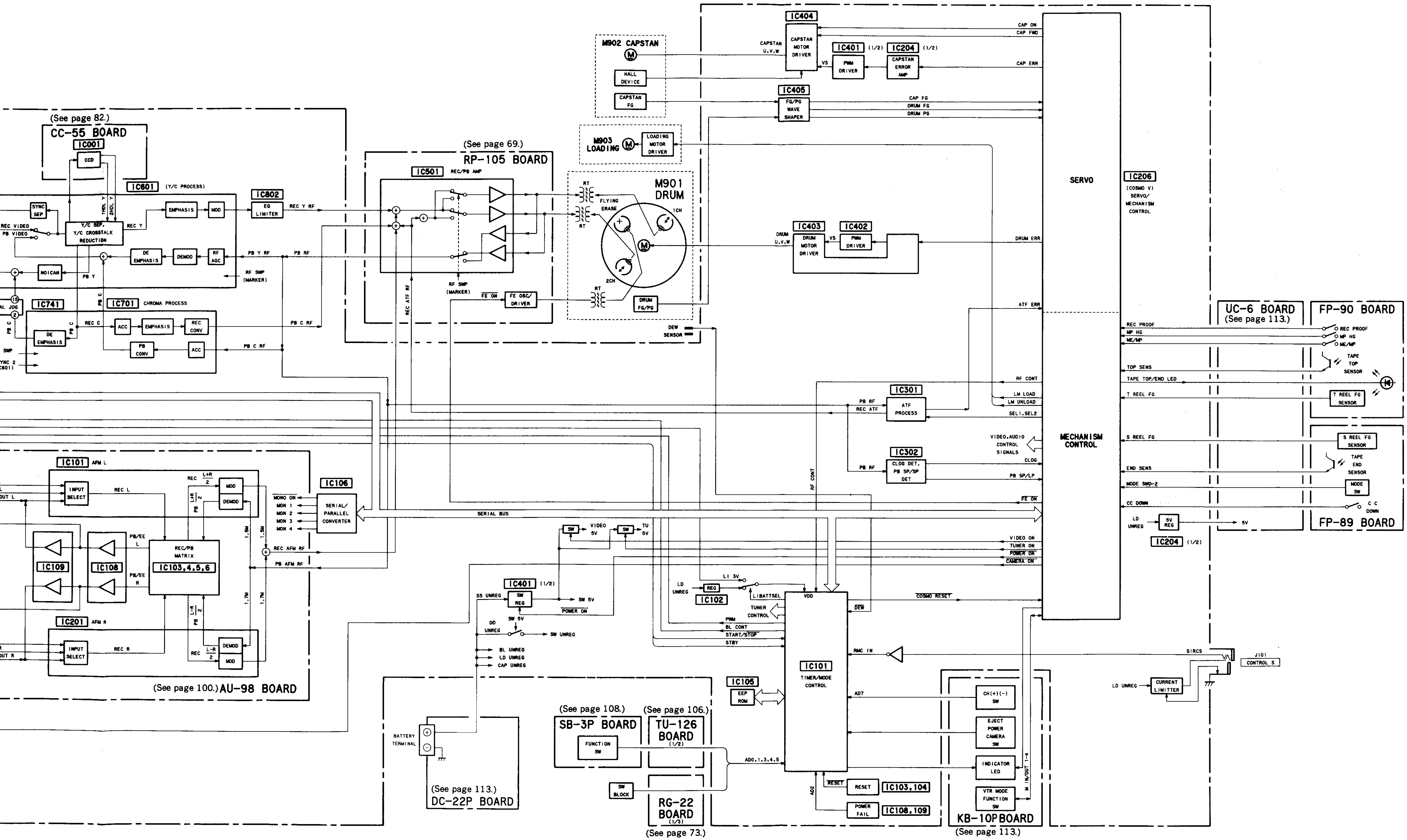
3-1. CIRCUIT BOARDS LOCATION


SB-3P (FUNCTION SW)
DC-22P (BATT IN)
CC-55 (CCD)
TU-126
(TUNER, VIF, SIF,
DC/DC CONVERTER)
AU-98
(STEREO AFM PROCESS)

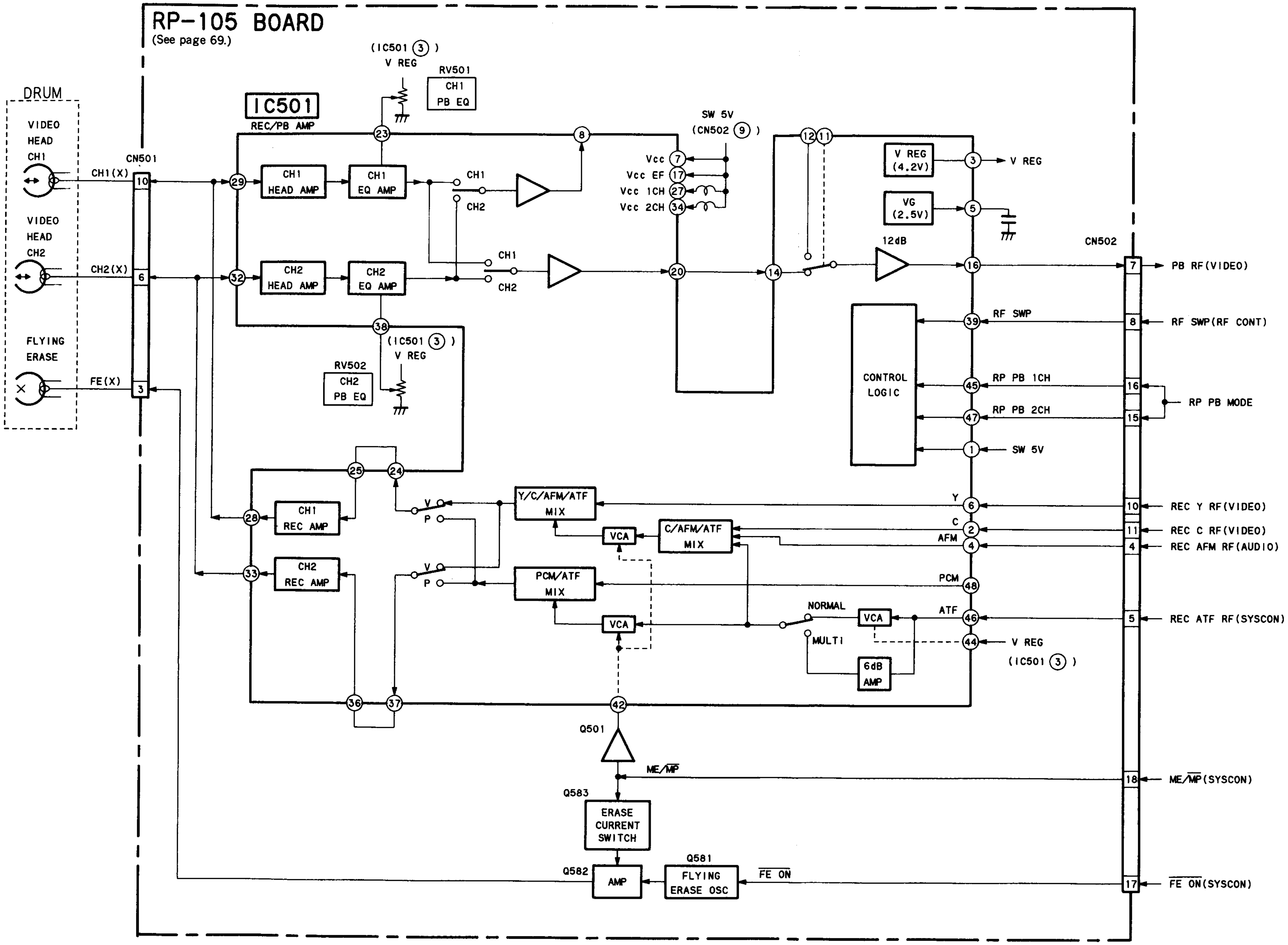

DISPLAY MODULE, LIQUID CRYSTAL
RG-22 (LCD VIDEO (R. G. B))
KB-10P (FUNCTION SW/LED)
CN-6P
(CAMERA CONNECTOR)
DC-AC INVERTER UNIT
RP-105 (REC/PB AMP)
SV-66
(VIDEO, SERVO, SYSTEM CONTROL,
ATF, MARKER)
UC-6
(MD REPLAY)

3-2. OVERALL BLOCK DIAGRAM

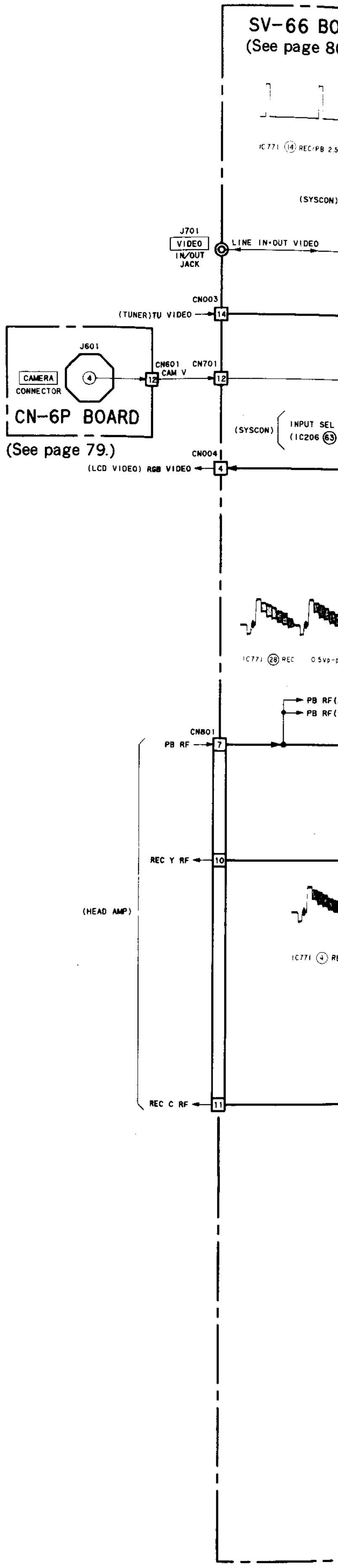

SV-66 BOARD
(See page 80,93.)
(See page 82.)
CC-55 BOARD
IC001
CCD
IC601 (Y/C PRO
SYNC SEP
Y/C SEP,
Y/C CROSSTALK
REDUCTION
REC Y
EMPHASIS
DE EMPHASIS
DEMOD
NOICAN
PB Y
REC VIDEO
PB VIDEO
C SYNC 1
C SYNC 2
IC771
VIDEO IN/OUT
AGC
LINE IN VIDEO
TUNER VIDEO
CAM VIDEO
PB VIDEO
RGB VIDEO
LINE OUT VIDEO
BUS DECODER
SERIAL BUS
PAL JOG
IC741
IC701 CHROMA PROCESS
DE EMPHASIS
REC C
ACC
EMPHASIS
PB CONV
RF SWP
C SYNC 2 (IC601)
PB C
(See page 73.)
RG-22 BOARD (1/3)
IC002
R.G.B., LCD DRIVE
IC801
CHARACTER DISPLAY
EXT VR
EXT VG
EXT VB
LCD
BACK LIGHT
DC-AC INVERTER
BL CONT
ANT
J001
EXT ANT
IU001
LITHIUM BATTERY
IC001,002
VIF/SIF
TU001
ANT
IF
VC
D-A CONV
VC PWM
DC-DC CONVERTER
+33V
SW UNREG
+16V
+13V
-8V
-20V
J601
J602
PHONES
HP ON
HP L
HP R
TU-126 BOARD (1/2)
(See page 106.)
(See page 79.)
CN-6P BOARD
SPEAKER
AUDIO POWER AMP
IC901
START/STOP
CAM V
CAM AU 1
CAM UNREG
CAM AU 2
STBY
J601
CAMERA CONNECTOR
LINE IN.OUT
VIDEO
CAM VIDEO
IC112
AMP
HP L
HP R
SW601
DBB
RV601
VOL
RG-22 BOARD (1/3) (See page 73.)
IC101 AFM L
INPUT SELECT
TU L
CAM L
LINE IN·OUT L
REC L
IC109
IC108
PB/EE L
PB/EE R
REC/PB MATRIX
IC103,4
IC201 AFM R
TU R
CAM R
LINE IN·OUT R
REC R
(See page
J701
VIDEO
RFU DC OUT
AUDIO
L
R
CURRENT LIMITTER
SW 5V
LINE IN·OUT L
LINE IN·OUT R
SW
CAM UNREG


(See page 82.)
CC-55 BOARD
IC001
CCD
IC601 (Y/C PROCESS)
SYNC SEP
REC VIDEO
PB VIDEO
Y/C SEP. Y/C CROSSTALK REDUCTION
EMPHASIS
MOD
IC802
EQ LIMITER
REC Y RF
DE EMPHASIS
DEMOD
RF AGC
PB Y RF
PB RF
RF SWP (MARKER)
NOICAN
PB Y
IC741
IC701 CHROMA PROCESS
REC C
ACC
EMPHASIS
REC CONV
PB C RF
DE EMPHASIS
PB CONV
ACC
PB C RF
SWP
(See page 69.)
RP-105 BOARD
IC501 REC/PB AMP
RF SWP (MARKER)
REC ATF RF
FE ON
FE OSC/ DRIVER
M902 CAPSTAN
HALL DEVICE
CAPSTAN FG
M903 LOADING
LOADING MOTOR DRIVER
M901 DRUM
RT
FLYING ERASE
1CH
2CH
DRUM FG/PG
DEW SENSOR
IC404
CAPSTAN MOTOR DRIVER
CAPSTAN U,V,W
IC401 (1/2)
PWM DRIVER
VS
IC204 (1/2)
CAPSTAN ERROR AMP
IC405
FG/PG WAVE SHAPER
CAP ON
CAP FWD
CAP ERR
CAP FG
DRUM FG
DRUM PG
IC403
DRUM MOTOR DRIVER
DRUM U,V,W
IC402
PWM DRIVER
DRUM ERR
ATF ERR
SERVO
IC206 (COSMO V) SERVO/ MECHANISM CONTROL
MECHANISM CONTROL
RF CONT
IC301
PB RF
REC ATF
ATF PROCESS
LM LOAD
LM UNLOAD
SEL1,SEL2
VIDEO,AUDIO CONTROL SIGNALS
IC302
CLOG DET, PB SP/SP DET
CLOG
PB SP/LP
FE ON
SERIAL BUS
VIDEO ON
TUNER ON
POWER ON
CAMERA ON
COSMO RESET
DEW
RMC IN
SIRCS
J101 CONTROL S
LD UNREG
CURRENT LIMITTER
UC-6 BOARD (See page 113.)
FP-90 BOARD
REC PROOF
MP HG
ME/MP
TOP SENS
TAPE TOP SENSOR
TAPE TOP/END LED
T REEL FG
T REEL FG SENSOR
S REEL FG
S REEL FG SENSOR
END SENS
TAPE END SENSOR
MODE SWO-2
MODE SW
CC DOWN
C C DOWN
FP-89 BOARD
LD UNREG
5V REG
5V
IC204 (1/2)
IC101 AFM L
INPUT SELECT
REC L
L+R 2
MOD
DEMOD
IC106
SERIAL/ PARALLEL CONVERTER
MONO ON
MON 1
MON 2
MON 3
MON 4
1.5M
1.7M
REC AFM RF
PB AFM RF
PB/EE L
PB/EE R
REC/PB MATRIX
IC103,4,5,6
IC109
IC108
IC201 AFM R
INPUT SELECT
REC R
L-R 2
DEMOD
MOD
(See page 100.) AU-98 BOARD
SW VIDEO 5V
SW TU 5V
IC401 (1/2)
SS UNREG
SW REG
SW 5V
POWER ON
DD UNREG
SW UNREG
BL UNREG
LD UNREG
CAP UNREG
LD UNREG
REG
IC102
LI 3V
LIBATTSEL
TUNER CONTROL
PWM
BL CONT
START/STOP
STBY
VDD
IC101 TIMER/MODE CONTROL
IC105 EEP ROM
AD7
AD0,1,3,4,5
AD2
RESET
RESET
IC103,104
POWER FAIL
IC108,109
BATTERY TERMINAL
(See page 113.)
DC-22P BOARD
(See page 108.)
SB-3P BOARD
FUNCTION SW
(See page 106.)
TU-126 BOARD (1/2)
SW BLOCK
RG-22 BOARD (1/3)
(See page 73.)
CH(+)(-) SW
EJECT POWER CAMERA SW
INDICATOR LED
VTR MODE FUNCTION SW
M IN/OUT 1-4
KB-10P BOARD
(See page 113.)

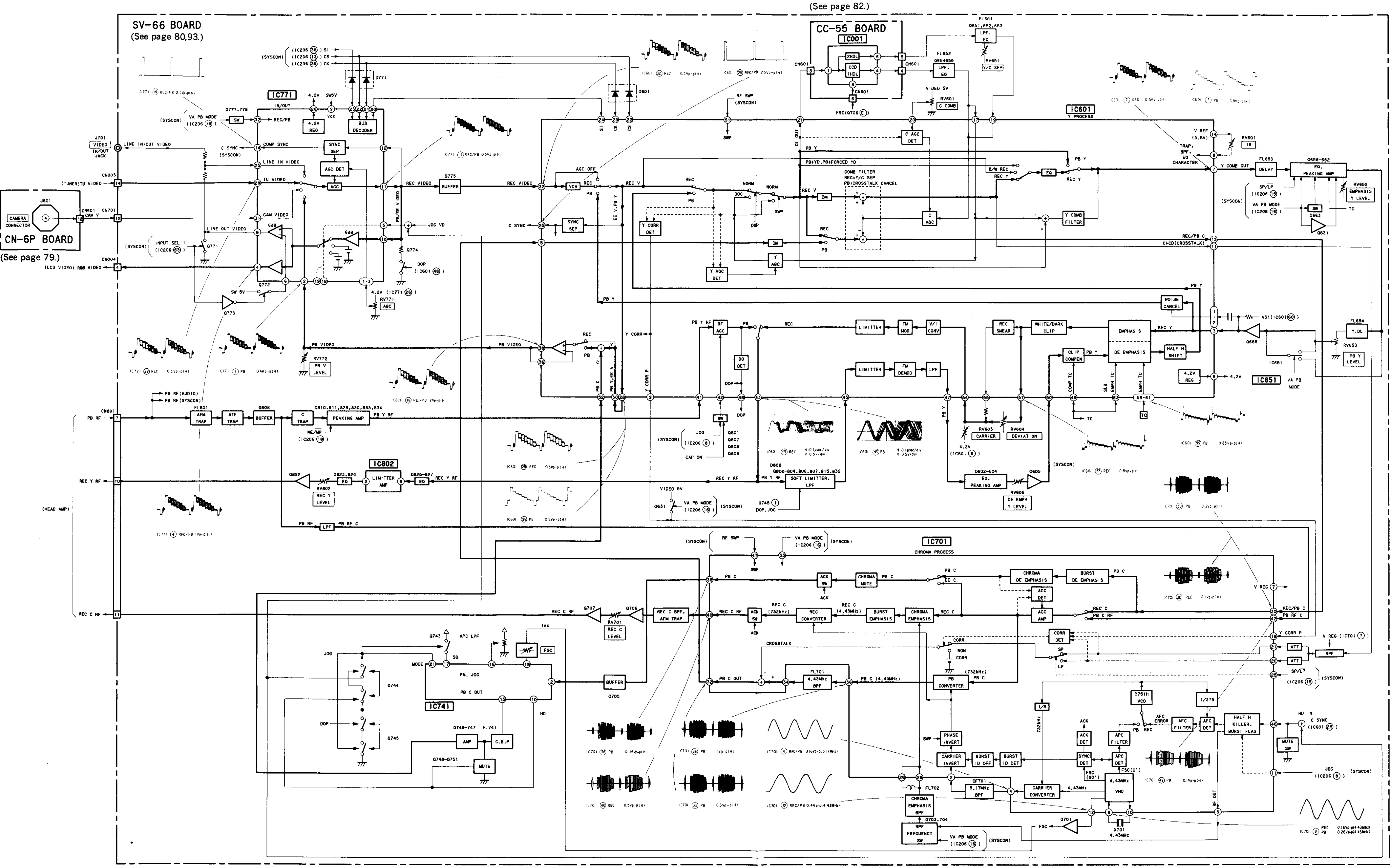
3-3. HEAD AMP BLOCK DIAGRAM


RP-105 BOARD
(See page 69.)
DRUM
VIDEO HEAD CH1
VIDEO HEAD CH2
FLYING ERASE
CN501
CH1(X)
CH2(X)
FE(X)
IC501
REC/PB AMP
(IC501 ③)
V REG
RV501
CH1 PB EQ
RV502
CH2 PB EQ
CH1 HEAD AMP
CH1 EQ AMP
CH2 HEAD AMP
CH2 EQ AMP
CH1
CH2
SW 5V
(CN502 ⑨)
Vcc
Vcc EF
Vcc 1CH
Vcc 2CH
V REG (4.2V)
VG (2.5V)
12dB
CN502
V REG
PB RF(VIDEO)
RF SWP
RF SWP(RF CONT)
CONTROL LOGIC
RP PB 1CH
RP PB 2CH
RP PB MODE
SW 5V
CH1 REC AMP
CH2 REC AMP
Y/C/AFM/ATF MIX
C/AFM/ATF MIX
PCM/ATF MIX
VCA
V
P
Y
C
AFM
PCM
ATF
NORMAL
MULTI
6dB AMP
REC Y RF(VIDEO)
REC C RF(VIDEO)
REC AFM RF(AUDIO)
REC ATF RF(SYSCON)
V REG
(IC501 ③)
Q501
ME/MP
ME/MP(SYSCON)
Q583
ERASE CURRENT SWITCH
Q582
AMP
Q581
FLYING ERASE OSC
FE ON
FE ON(SYSCON)

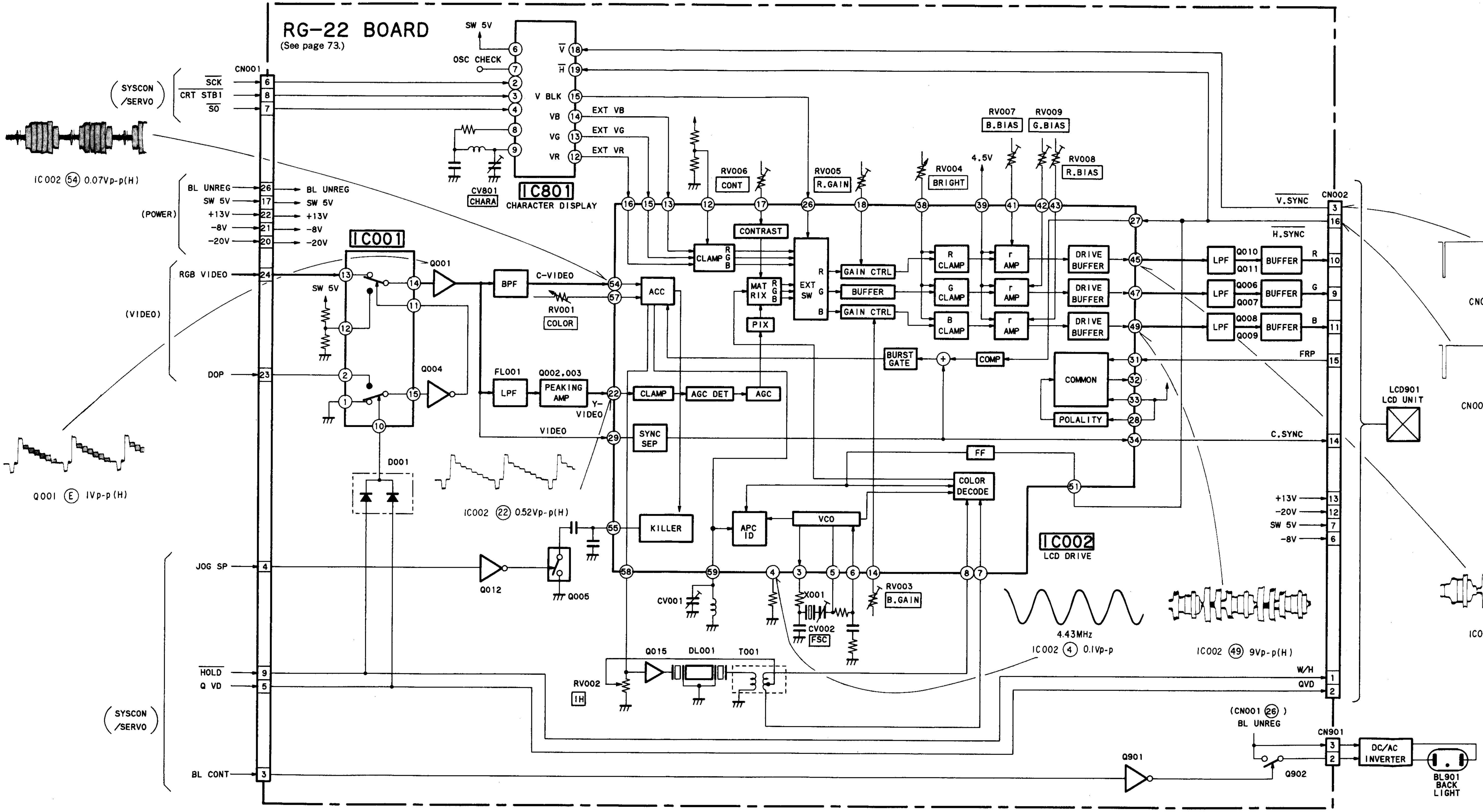
3-4. VIDEO BLOCK DIAGRAM

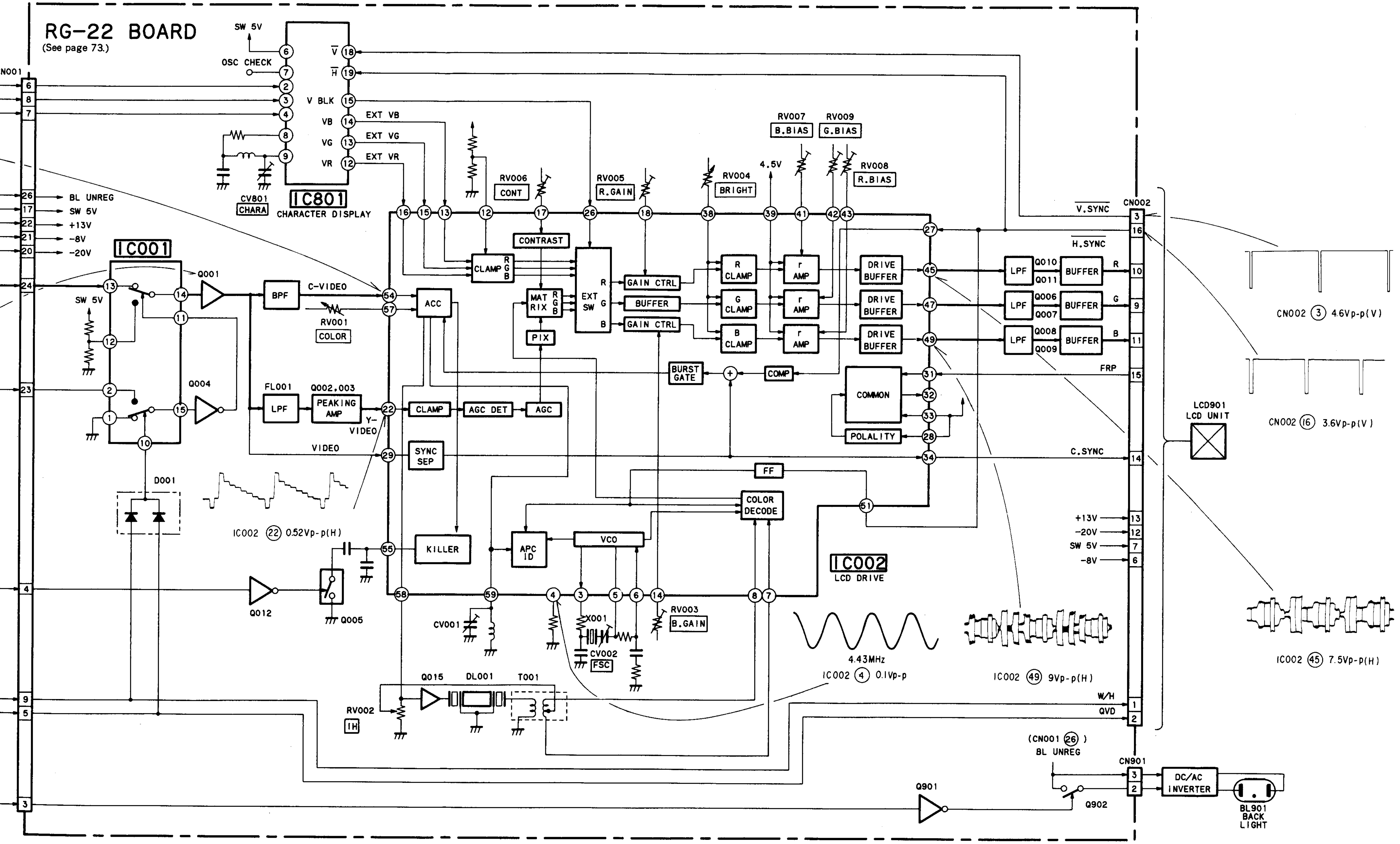

SV-66 BO
(See page 8
J701
VIDEO IN/OUT JACK
LINE IN·OUT VIDEO
CN003
(TUNER)TU VIDEO
J601
CAMERA CONNECTOR
CN601
CN701
CAM V
CN-6P BOARD
(See page 79.)
(SYSCON)
INPUT SEL
CN004
(LCD VIDEO) RGB VIDEO
CN801
PB RF
REC Y RF
(HEAD AMP)
REC C RF

3-4. VIDEO BLOCK DIAGRAM

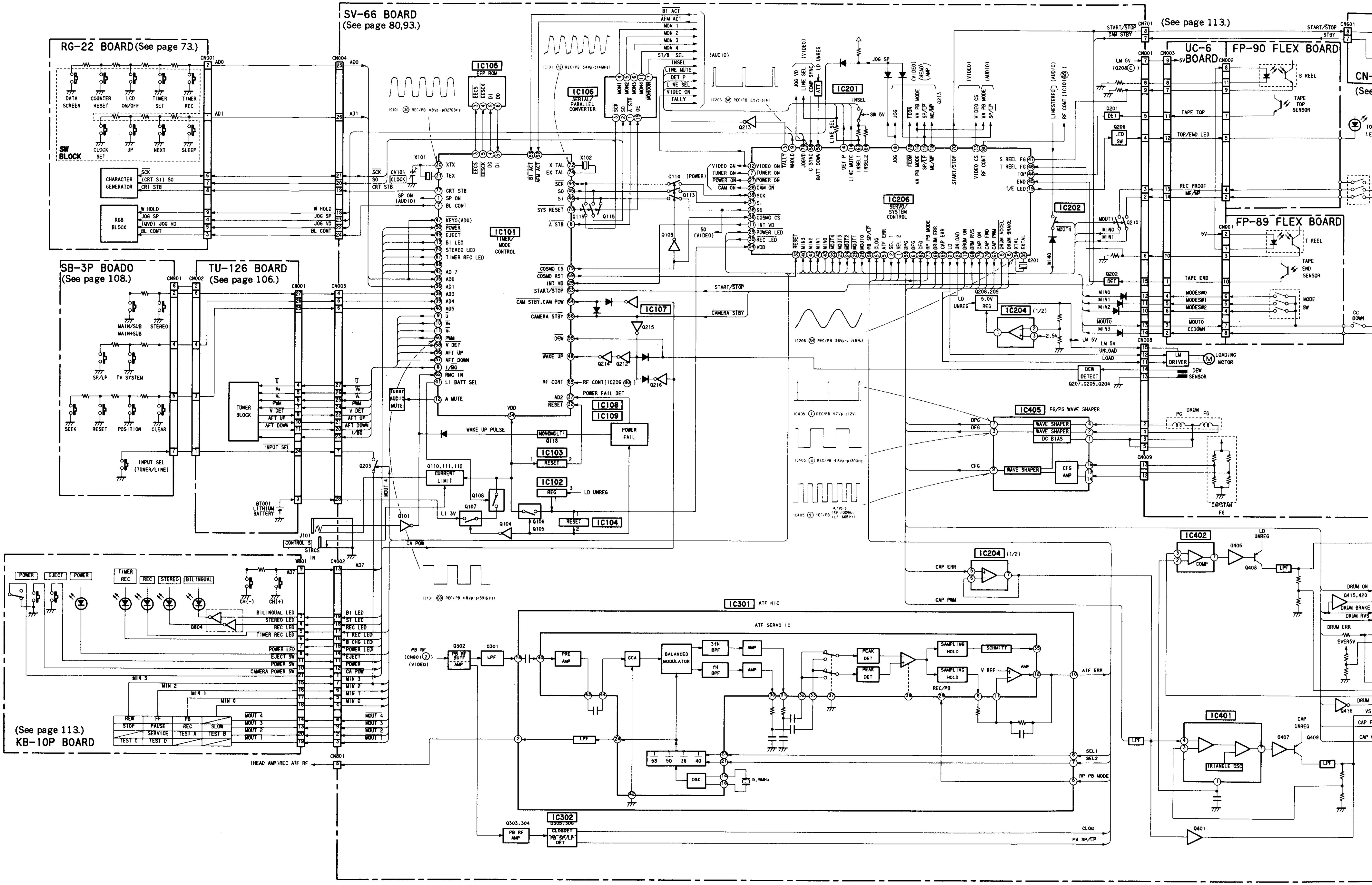

SV-66 BOARD
(See page 80,93.)
CC-55 BOARD
(See page 82.)
CN-6P BOARD
(See page 79.)
IC771
IC001
IC601
Y PROCESS
IC651
IC802
IC701
CHROMA PROCESS
IC741
J701 VIDEO IN/OUT JACK
J601 CAMERA CONNECTOR
BUS DECODER
SYNC SEP
AGC DET
AGC
BUFFER
VCA
Y CORR DET
Y AGC DET
DM
Y AGC
C AGC DET
C AGC
Y COMB FILTER
COMB FILTER REC:Y/C SEP PB:CROSSTALK CANCEL
DELAY
EQ, PEAKING AMP
NOISE CANCEL
Y.DL
EMPHASIS
DE EMPHASIS
HALF H SHIFT
WHITE/DARK CLIP
REC SMEAR
V/I CONV
FM MOD
LIMITTER
FM DEMOD
LPF
CLIP COMPEN
RF AGC
DO DET
SOFT LIMITTER, LPF
AFM TRAP
ATF TRAP
C TRAP
PEAKING AMP
LIMITTER AMP
CHROMA DE EMPHASIS
BURST DE EMPHASIS
CHROMA MUTE
ACK SW
ACC DET
ACC AMP
REC CONVERTER
BURST EMPHASIS
CHROMA EMPHASIS
REC C BPF, AFM TRAP
CORR DET
PB CONVERTER
4.43MHz BPF
PHASE INVERT
CARRIER INVERT
BURST ID OFF
BURST ID DET
SYNC DET
ACK DET
APC FILTER
APC DET
CARRIER CONVERTER
4.43MHz VXO
375fH VCO
1/8
1/375
AFC FILTER
AFC DET
HALF H KILLER, BURST FLAG
MUTE SW
CHROMA EMPHASIS BPF
BPF FREQUENCY SW
5.17MHz BPF
AMP
C.B.P
MUTE
PB RF
REC Y RF
REC C RF
(HEAD AMP)
(SYSCON)

3-5. LCD VIDEO BLOCK DIAGRAM

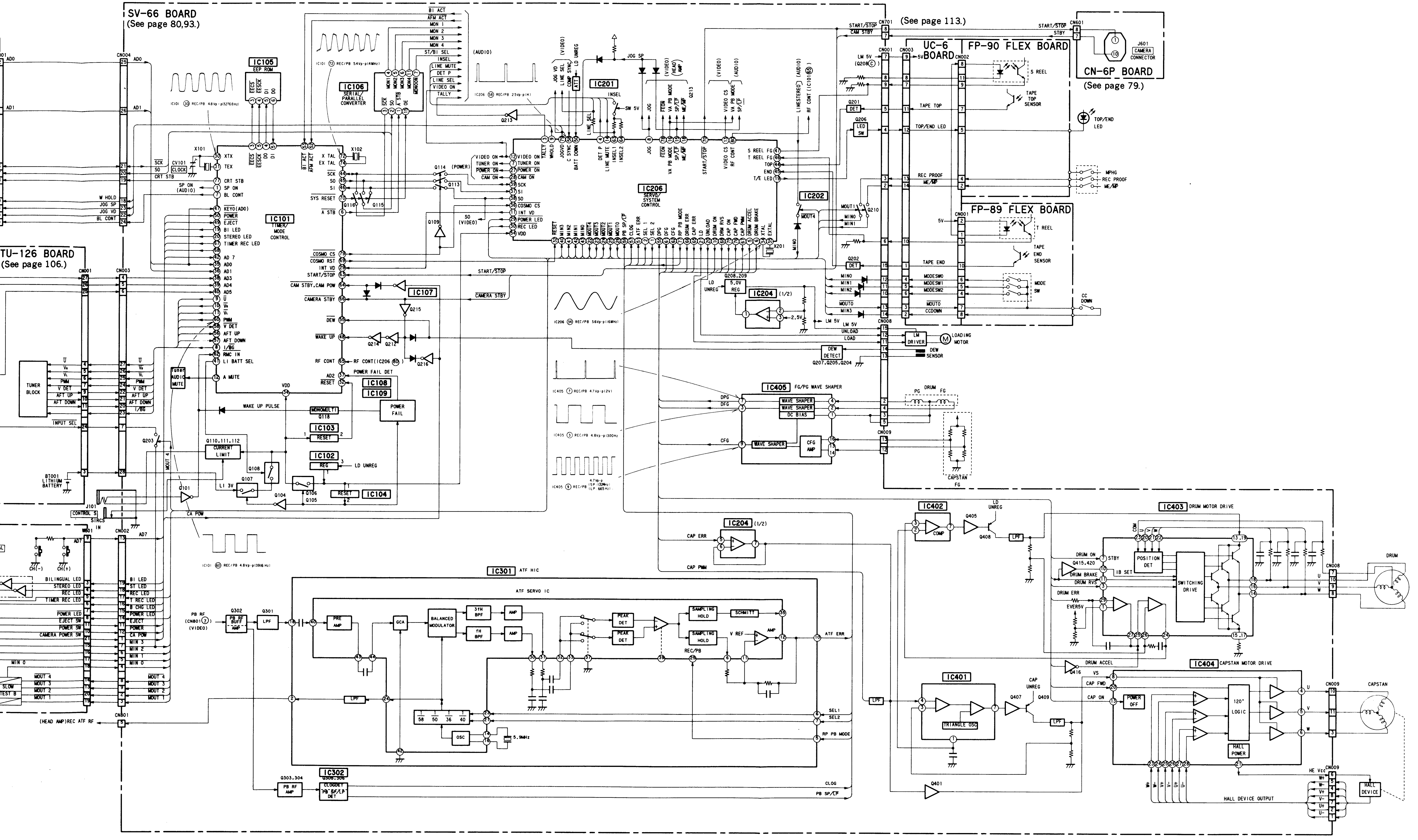

RG-22 BOARD
(See page 73.)
SYSCON /SERVO
CN001
SCK
CRT STB1
SO
IC002 (54) 0.07Vp-p(H)
BL UNREG
SW 5V
+13V
-8V
-20V
(POWER)
RGB VIDEO
(VIDEO)
DOP
Q001 (E) 1Vp-p(H)
JOG SP
HOLD
Q VD
BL CONT
SW 5V
OSC CHECK
V
H
V BLK
VB
VG
VR
EXT VB
EXT VG
EXT VR
CV801
CHARA
IC801
CHARACTER DISPLAY
IC001
Q001
Q004
D001
BPF
C-VIDEO
RV001
COLOR
FL001
LPF
Q002,003
PEAKING AMP
Y-VIDEO
VIDEO
IC002 (22) 0.52Vp-p(H)
ACC
CLAMP
AGC DET
AGC
SYNC SEP
KILLER
APC ID
VCO
Q012
Q005
CV001
X001
CV002
FSC
RV003
B.GAIN
Q015
DL001
T001
RV002
1H
RV006
CONT
CONTRAST
MAT RIX
PIX
EXT SW
RV005
R.GAIN
GAIN CTRL
BUFFER
BURST GATE
COMP
RV004
BRIGHT
4.5V
RV007
B.BIAS
RV009
G.BIAS
RV008
R.BIAS
R CLAMP
G CLAMP
B CLAMP
r AMP
DRIVE BUFFER
COMMON
POLALITY
FF
COLOR DECODE
IC002
LCD DRIVE
4.43MHz
IC002 (4) 0.1Vp-p
IC002 (49) 9Vp-p(H)
LPF
Q010
Q011
Q006
Q007
Q008
Q009
BUFFER
V.SYNC
H.SYNC
R
G
B
FRP
C.SYNC
+13V
-20V
SW 5V
-8V
W/H
QVD
CN002
LCD901
LCD UNIT
(CN001 (26))
BL UNREG
CN901
Q901
Q902
DC/AC INVERTER
BL901
BACK LIGHT
CN0
CN00
IC0


RG-22 BOARD
(See page 73.)
N001
SW 5V
OSC CHECK
V BLK
VB
VG
VR
V
H
EXT VB
EXT VG
EXT VR
CV801
CHARA
IC801
CHARACTER DISPLAY
BL UNREG
SW 5V
+13V
-8V
-20V
IC001
Q001
Q004
BPF
C-VIDEO
RV001
COLOR
ACC
FL001
LPF
Q002,003
PEAKING AMP
Y-VIDEO
VIDEO
CLAMP
AGC DET
AGC
SYNC SEP
KILLER
APC ID
VCO
D001
IC002 (22) 0.52Vp-p(H)
Q012
Q005
CV001
X001
CV002
FSC
RV003
B.GAIN
Q015
DL001
T001
RV002
1H
RV006
CONT
CONTRAST
MAT RIX
PIX
EXT SW
RV005
R.GAIN
GAIN CTRL
BUFFER
GAIN CTRL
RV004
BRIGHT
4.5V
RV007
B.BIAS
RV009
G.BIAS
RV008
R.BIAS
R CLAMP
G CLAMP
B CLAMP
r AMP
DRIVE BUFFER
BURST GATE
COMP
COMMON
POLALITY
FF
COLOR DECODE
IC002
LCD DRIVE
4.43MHz
IC002 (4) 0.1Vp-p
IC002 (49) 9Vp-p(H)
LPF
Q010
Q011
Q006
Q007
Q008
Q009
BUFFER
R
G
B
V.SYNC
H.SYNC
FRP
C.SYNC
CN002
+13V
-20V
SW 5V
-8V
W/H
QVD
LCD901
LCD UNIT
CN002 (3) 4.6Vp-p(V)
CN002 (16) 3.6Vp-p(V)
IC002 (45) 7.5Vp-p(H)
(CN001 (26))
BL UNREG
CN901
Q901
Q902
DC/AC INVERTER
BL901
BACK LIGHT

3-6. SERVO/SYSTEM CONTROL BLOCK DIAGRAM


SV-66 BOARD
(See page 80,93.)
RG-22 BOARD (See page 73.)
SW BLOCK
DATA SCREEN
COUNTER RESET
LCD ON/OFF
TIMER SET
TIMER REC
CLOCK SET
UP
NEXT
SLEEP
CHARACTER GENERATOR
RGB BLOCK
SB-3P BOADO
(See page 108.)
MAIN/SUB MAIN+SUB
STEREO
SP/LP
TV SYSTEM
SEEK
RESET
POSITION
CLEAR
INPUT SEL (TUNER/LINE)
TU-126 BOARD
(See page 106.)
TUNER BLOCK
BT001 LITHIUM BATTERY
(See page 113.)
KB-10P BOARD
POWER
EJECT
TIMER REC
REC
STEREO
BTLINGUAL
REW STOP
FF PAUSE SERVICE
PB REC
SLOW TEST B
IC105 EEP ROM
IC106 SERIAL/PARALLEL CONVERTER
IC101 TIMER/MODE CONTROL
IC201
IC206 SERVO/SYSTEM CONTROL
IC202
IC107
IC108
IC109
POWER FAIL
IC103 RESET
IC102 REG
IC104 RESET
IC204 (1/2)
IC405 FG/PG WAVE SHAPER
WAVE SHAPER
DC BIAS
CFG AMP
IC301 ATF HIC
ATF SERVO IC
PRE AMP
GCA
BALANCED MODULATOR
3fH BPF
fH BPF
AMP
PEAK DET
SAMPLING HOLD
SCHMITT
V REF
OSC
5.9MHz
IC302 CLOGDET PB SP/LP DET
PB RF AMP
IC402 COMP
IC401 TRIANGLE OSC
UC-6 BOARD
FP-90 FLEX BOARD
FP-89 FLEX BOARD
S REEL
T REEL
TAPE TOP SENSOR
TAPE END SENSOR
MODE SW
LM DRIVER
LOADING MOTOR
DEW DETECT
DEW SENSOR
DRUM FG
PG
CAPSTAN FG
(See page 113.)
CN-

LOCK DIAGRAM


SV-66 BOARD
(See page 80,93.)
TU-126 BOARD
(See page 106.)
UC-6 BOARD
FP-90 FLEX BOARD
FP-89 FLEX BOARD
CN-6P BOARD
(See page 79.)
(See page 113.)
IC105 EEP ROM
IC106 SERIAL/PARALLEL CONVERTER
IC101 TIMER/MODE CONTROL
IC201
IC206 SERVO/SYSTEM CONTROL
IC202
IC107
IC108
IC109
POWER FAIL
IC103 RESET
IC102 REG
IC104 RESET
IC204 (1/2)
IC405 FG/PG WAVE SHAPER
WAVE SHAPER
DC BIAS
CFG AMP
IC301 ATF HIC
ATF SERVO IC
PRE AMP
GCA
BALANCED MODULATOR
31H BPF
fH BPF
AMP
PEAK DET
SAMPLING HOLD
SCHMITT
V REF
OSC
5.9MHz
IC302
CLOGDET
PB SP/LP DET
PB RF AMP
IC402 COMP
IC403 DRUM MOTOR DRIVE
POSITION DET
SWITCHING DRIVE
IC401
TRIANGLE OSC
IC404 CAPSTAN MOTOR DRIVE
120° LOGIC
HALL POWER
POWER OFF
HALL DEVICE
HALL DEVICE OUTPUT
DRUM
CAPSTAN
CAPSTAN FG
LOADING MOTOR
LM DRIVER
DEW SENSOR
DEW DETECT
TUNER BLOCK
TUNER AUDIO MUTE
BT001 LITHIUM BATTERY
CURRENT LIMIT
MONOMULTI
WAKE UP PULSE
S REEL
T REEL
TAPE TOP SENSOR
TAPE END SENSOR
TOP/END LED
MODE SW
CC DOWN
J601 CAMERA CONNECTOR
PG DRUM FG
ATF ERR
CAP ERR
CAP PWM
(HEAD AMP)REC ATF RF
PB RF (CN801 ⑦) (VIDEO)

3-7. TABLE OF SV-66 BOARD IC206 (CXP-80116) PORT

Terminal No.	Signal Name.	I/O	Definition	POWOFF
1	SEL2	O	ATF REF SELECT	L
2	SEL1	O	ATF REF SELECT	L
3	$\overline{\text{TALLY}}$	O	TALLY output for external camera	L
4	DET P	O	ST/BI determination pulse	L
5	$\overline{\text{DRM ACCEL}}$	O	Drum FH acceleration pulse	L
6	DRM BREAK	O	Drum FH deceleration pulse	L
7	TUNER ON	O	TUNER 5V power ON/OFF signal	L
8	JOG	O	H signal at varying speed playback	L
9	W HOLD	O	Signal for LCD VIDEO HOLD	L
10	DRUM ON	O	DRUM DRIVER control signal	L
11	INT VD	O	INTERNAL VD output	L
12	VIDEO ON	O	VIDEO power ON/OFF signal	L
13	$\overline{\text{VIDEO CS}}$	O	Chip select for VIDEO communication	L
14	LINE MUTE	O	Audio MUTE signal	L
15	SP/$\overline{\text{LP}}$	O	SPEED MODE signal	L
16	VAPB MODE	O	VIDEO, AUDIO REC/PB selecting signal	L
17		O		L
18	ME/$\overline{\text{MP}}$	O	ME/MP TAPE determination signal	L
19	T/E LED	O	TAPE TOP/END detection signal	L
20	UN LD	O	LOADING MOTOR control signal	L
21	LD	O	LOADING MOTOR control signal	L
22	$\overline{\text{M OUT4}}$	O	KEY MATRIX output	L
23	$\overline{\text{M OUT3}}$	O	KEY MATRIX output	L
24	M OUT2	O	KEY MATRIX output	L
25	M OUT1	O	KEY MATRIX output	L
26	$\overline{\text{M OUT0}}$	O	KEY MATRIX output	L
27	$\overline{\text{POW ON}}$	O	SW 5V system power source control signal	Hiz
28	$\overline{\text{CAMERA ON}}$	O	Power source control signal for CAMERA	Hiz
29	$\overline{\text{(POWER)BATT LED}}$	O	POWER LED control signal	Hiz
30	$\overline{\text{REC LED}}$	O	REC LED control signal	Hiz
31	MP			—
32	$\overline{\text{CC RESET}}$	I	COSMO RESETterminal	—
33	V_{SS}		GND	
34	XTAL		Terminal for 16MHz Xtal	
35	EXTAL		Terminal for 16MHz Xtal	
36	$\overline{\text{SYNCON CS}}$	I/O	Chip select for SYSCON	—
37	SYSCON SI	I	Serial data input	—
38	SYSCON SO	I	Serial data output	—
39	$\overline{\text{SYSCON SCK}}$	I/O	Serial clock	—
40	M IN3	I	MATRIX input	—
41	M IN2	I	MATRIX input	—
42	M IN1	I	MATRIX input	—
43	M IN0	I	MATRIX input	—
44	TAPE TOP	I	TAPE TOP A/D	—
45	TAPE END	I	TAPE END A/D	—
46	T REEL FG	I	T REEL FG A/D	—
47	S REEL FG	I	S REEL FG A/D	—
48		I		—
49		I		—
50	BATT DOWN	I	BATT DOWN A/D	—
51	ATF ERROR	I	ATF ERROR A/D	—
52	AD GND			
53	AV REF		Standard voltage for A/D	
54	AV_{DD}		Power source for A/D	
55	DRUM PG	I	DRUM PG input	—
56				
57	CLOG	I	CLOG detection input	—
58	COMP SYNC	I	COMP SYNC input	—
59	PB SP/$\overline{\text{LP}}$	I	FF/REW CUE/REV SP/LP determination input	—
60	DRUM PG	I	DRUM PG input	—
61	DRUM FG	I	DRUM FG input	—
62	CAP FG	I	CAP FG input	—
63	INPUT SEL1	O	Input selecting signal for audio	H
64	INPUT SEL2	O	Input selecting signal for audio	H
65	CAP ER	O	CAPSTAN ERROR output	Hiz
66	DRM ER	O	DRUM 3STATE ERROR output	Hiz
67	CAP PWM	O	CAPSTAN PWM ERROR output	L
68	DRUM RVS	O	DRUM direction selecting signal	L
69	CAP FG	O	CAPSTAN FG input for HMS	—
70	START/STOP	O	External camera START/STOP input	—
71	~NMI			
72	V_{DD}		Power source for COSMO	
73	V_{SS}		GND	
74	Vpp			
75	CAP ON	O	CAPSTAN DRIVER ON OFF signal	L
76	CAP FWD	O	CAPSTAN direction selecting signal	L
77	RP PB MODE	O	REC/PB selecting signal	L
78	$\overline{\text{FE ON}}$	O	Flying erase oscillation ON/OFF signal	L
79	JOG VD	O	VD signal inserting to VIDEO at varying speed playback	L
80	RF CONT	O	RF CONT output	L

3-8. TEST MODE

Use CN802 on the KB-10P board.

CN802 pin position

1	TEST B
2	GND
3	TEST A
4	TEST C
5	TEST D

When each terminal of the TEST A, B, C and D is shortened and opened, twelve types of TEST MODE are selected.

When servicing, attaching the "test mode set jig" (J-6082-110-A) to CN802 allows to select twelve types of test mode with the hexadecimal selecting switches of the jig.

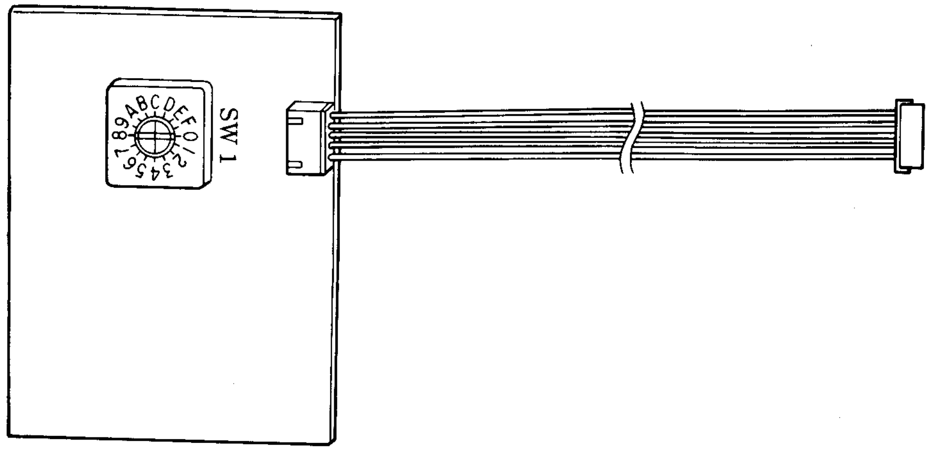


Fig3-1. Test mode set jig

TEST MODE table		Switch position of the test mode set jig.
DCBA	SELECT MODE	
0 0 0 0	Normal mode	0
0 0 0 1	Emergency off	1
0 0 1 0	TT TEST	2
0 0 1 1	Track shift	3
0 1 0 0	SW POSI L	4
0 1 0 1	SW POSI H	5
0 1 1 0	BATT DOWN PRE	6
0 1 1 1	BATT DOWN END	7
1 0 0 0	VIDEO DATA, MP, SP	8
1 0 0 1	VIDEO DATA, MP, LP	9
1 0 1 0	VIDEO DATA, ME, SP	A
1 0 1 1	VIDEO DATA, ME, LP	B

The test code is designated by four figures.

MSB LSB
"D", TEST "C", TEST "B", TEST "A"

At short : 1, At open : 0

VIDEO DATA SELECT MODE is set at the TEST, "D" MAKE.

① Normal mode
Normal set condition

② Emergency off (Release of emergency stop)

③ TT TEST
MODE for extending the SIRCS code (For producing line)

④ Track shift
Run on the ATF track shift condition at the playback mode.
Timer microcomputer is in the clock adjustment mode.

⑤ SW POSI
Adjustment mode of switch position.
SWPOSI is stored in EEPROM as 16bit DATA. This data is adjusted dividing high 8bit and low 8bit. Use CH+/− KEY.

TEST MODE0101 : Varies at 16μsec per 1STEP.

TEST MODE0100 : Varies at 1μsec per 1STEP. When low 8 bit is incremented from FF. HEX, high 8 bit goes UP. And when it is decremented from 00.HEX, high 8 bit goes DOWN.

When the EEPROM has been replaced, it takes considerable time to adjust it. Therefore. the data must be preset before entering adjustment.

Preset function of the SW POSI is added. The preset function sets to high 8 bit to 07. HEX, when the DATA SCREEN KEY of SC part is pressed in the SW POSI adjustment mode. The low 8 bit is not varied.

<When the SV-66 Board IC206 is CXP80116-805Q>

If SW POSI adjustment has been done (for example, for mechanism deck replacement), IC206 should be replaced by CXP80116-821Q (8-752-818-67).

⑥ BATTTERY DOWN ADJUSTMENT

Adjusted with TEST MODE 0111. When this mode is set, the following display is shown on LCD.

PRE −1.76 } ex
DOWN −1.74

Supplying voltage for adjusting is performed with applying 5.50V+0.02V to the battery terminal in the TUNER REC SP MODE. When pressing the CH+ KEY on the KB-10P board, the color of display on the LCD turns to blue for few seconds from white, and then returns to white. The voltage of the battery PRE, DOWN is stored in EEPROM as the 8bit DATA by this operation.

⑦ VIDEO DATA ADJUSTMENT MODE

Short the TEST D (Solder the split land at the lower part of the KB-10P board Q803)
The following display is shown on the LCD.

VIDEO DATA

CFL1	1	(RESET)
CFL2	1	(DISPLAY)
NCL1	1	(SLEEP)
NCL2	1	(NEXT)
NCLP1	1	(UP)
NCLP2	1	(CLOCK)

KB-10P BOARD (Component Side)

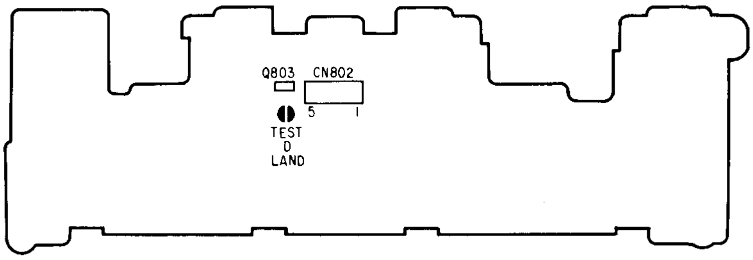


Fig3-2.

Six types of DATA are varied with the KEY on the SC part.
RESET → COUNTER RESET KEY
DISPLAY → DATA SCREEN KEY
SLEEP → SLEEP KEY
NEXT → NEXT KEY
UP → + KEY
CLOCK → CLOCK SET KEY

Pressing each KEY allows to rewrite DATA. ("0" is rewritten to "L", "1" is rewritten to "H".)
Four modes are adjusted by the types of TAPE (ME, MP) and TAPE SPEED (SP, LP).when the CH+KEY is pressed, the color of the display on the LCD turns to blue for few seconds from white and returns to white. The function to store the screen DATA in EEPROM is added by this operation. (See to the Table 3-1. for the data writing to EEPROM.)

Table 3-1. EE P ROM Write Data

TEST MODE											
D	C	B	A	Switch position of the test mode set jig		CFL1	CFL2	NCL1	NCL2	NCLP1	NCLP2
1	0	0	0	8	SP•MP	H	L	H	L	L	L
1	0	0	1	9	LP•MP	L	H	L	H	H	L
1	0	1	0	A	SP•ME	H	L	H	L	L	L
1	0	1	1	B	LP•ME	L	H	L	H	H	L

Note) When EEPROM is replaced, the following adjustment or write should be performed.

1. SW POSI adjustment
2. BATTERY DOWN adjustment
3. VIDEO DATA write
4. Channel preset

3-9. LIST OF SIRCS CODE (CATEGORY : VTR2)

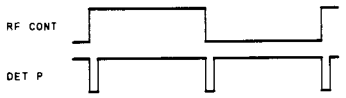
CODE No.	CODE	COMMAND
01	00	CH-1/1
02	01	CH-2/2
03	02	CH-3/3
04	03	CH-4/4
05	04	CH-5/5
06	05	CH-6/6
07	06	CH-7/7
08	07	CH-8/8
09	08	CH-9/9
10	09	CH-10/0
11	0 A	CH-11/*
12	0 B	CH-12/CH/ENTER/#
13	0 C	CH-13/1−
14	0 D	CH-14/2−
17	10	CH-HIGH(+)
18	11	CH-LOW(−)
22	15	POWER ON/OFF
23	16	EJECT
24	17	MPX MAIN/SUB
25	18	STOP
26	19	PAUSE

CODE No.	CODE	COMMAND
27	1 A	PB
28	1 B	REWIND
29	1 C	FF
30	1 D	REC
33	20	STILL
36	23	1/5 SLOW
47	2 E	POWER ON
48	2 F	POWER OFF
50	31	FORWARD
55	36	SLEEP
71	46	COUNTER RESET
72	47	MEM CNTR ON/OFF
80	4F	INPUT SELECT
89	58	SPEED CHANGE
91	5A	COUNTER DISPLAY ON/OFF
97	60	TIMER SET
98	61	NEXT
102	65	TIMER REC

3-10. SYSTEM CONTROL — VIDEO • AUDIO PART INTERFACE

Signal mode	I/O	Terminal No.	VTR MODE												CAMERA MODE	
			STOP	FF	REW	FR SEARCH		PB	PICTURE SEARCH		PB PAUSE	SLOW	REC	REC PAUSE	STAND BY	REC
						CUE	REVIEW		CUE	REVIEW						
DET P	O	IC206 ④	H	H	H	H	H	* 1	H	H	H	H	* 2	H	H	H
JOG	O	IC206 ⑧	L	L	L	H	H	L	H	H	H	H	L	L	L	L
W HOLD	O	IC206 ⑨	H	H	H	* 3	* 3	H	* 3	* 3	* 4	* 4	H	H	H	H
VIDEO ON	O	IC206⑫	L	L	L	H	H	H	H	H	H	H	H	H	H	H
VIDEO CS	O	IC206⑬	* 5	* 5	* 5	* 5	* 5	* 5	* 5	* 5	* 5	* 5	* 5	* 5	* 5	* 5
LINE MUTE	O	IC206⑭	L	L	L	H	H	L	H	H	H	H	L	L	L	L
SP/LP	O	IC206⑮	H/L	H/L	H/L	* 6	* 6	* 6	* 6	* 6	* 6	* 6	H/L	H/L	H/L	H/L
VA PB MODE	O	IC206⑯	L	L	L	H	H	H	H	H	H	H	L	L	L	L
ME/MP	O	IC206⑱	* 8	* 8	* 8	* 8	* 8	* 8	* 8	* 8	* 8	* 8	* 8	* 8	* 8	* 8
SYSCON SO	O	IC206㊳	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9
SYSCON SCK	I/O	IC206㊴	* 10	* 10	* 10	* 10	* 10	* 10	* 10	* 10	* 10	* 10	* 10	* 10	* 10	* 10
CLOG	I	IC206(57)	H	* 12	* 12	* 12	* 12	* 12	* 12	* 12	* 12	* 12	H	H	H	H
COMP SYNC	I	IC206(58)	* 13	* 13	* 13	* 13	* 13	* 13	* 13	* 13	* 13	* 13	* 13	* 13	* 13	* 13
PB SP/$\overline{\text{LP}}$	I	IC206(59)	L	* 14	* 14	* 14	* 14	L	* 14	* 14	L	L	L	L	L	L
INPUT SEL1	O	IC206(63)	* 15	* 15	* 15	* 15	* 15	* 15	* 15	* 15	* 15	* 15	* 15	* 15	* 15	* 15
INPUT SEL2	O	IC206(64)	* 16	* 16	* 16	* 16	* 16	* 16	* 16	* 16	* 16	* 16	* 16	* 16	* 16	* 16
RP PB MODE	O	IC206(77)	H	H	H	H	H	H	H	H	H	H	L	H	H	L
$\overline{\text{FE ON}}$	O	IC206(78)	H	H	H	H	H	H	H	H	H	H	L	H	H	L
JOG V_D	O	IC206(79)	L	L	L	* 7	* 7	L	* 7	* 7	* 7	* 7	L	L	L	L
RF CONT	O	IC206(80)	L	* 11	* 11	* 11	* 11	* 11	* 11	* 11	* 11	* 11	* 11	* 11	* 11	* 11

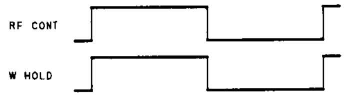
* 1, 2 DET P



PB : "L"pulse every 1V
REC : "H" at STEREO and MONO
REC : "L" pulse every 1V at BILIGUAL

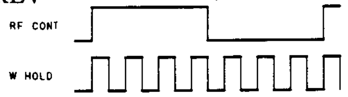
*3, 4 W HOLD

STILL, SLOW (LCD ON)



"H" at LCD OFF

CUE, REV (LCD ON)



"H" at LCD OFF

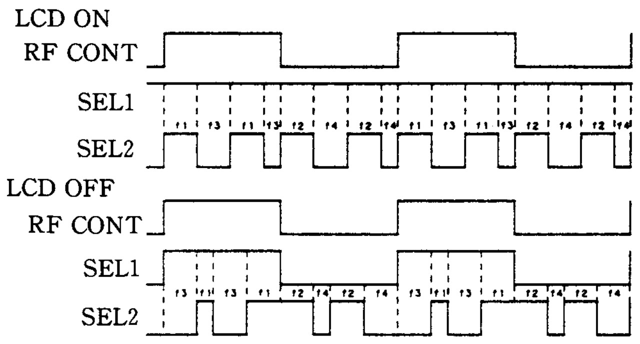
* 5 : "L" pulse of 1V period
* 6 : By the recording mode of the playback tape.
* 7 : "H" pulse of 1V period.
* 8 : "L" at using MP TAPE.
* 9 : "L" pulse of 1V period.
* 10: "L" pulse of 1V period.
* 11: Duty pulse of 50% of 2V period.
* 12: "H" when the video head is loaded, and "L" at normal.
* 13: Positive polarity composite synchronizing signal.
* 14: "H" at the SP recorded tape, "L" at the LP recorded tape.
* 15, * 16: Output according to the input mode.

INPUT MODE	INPUT SEL1	INPUT SEL2
TUNER	L	L
LINE	H	H
CAMERA	H	L
PB	L	L
POWER OFF	H	H

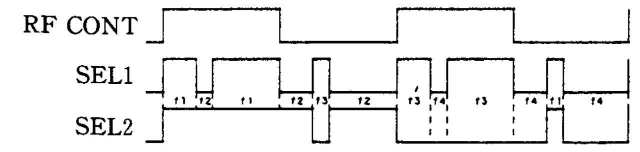
3-11. SYSTEM CONTROL — SERVO PERIPHERAL CIRCUIT INTERFACE

			VTR MODE												CAMERA MODE		
Signal Name	I/O	Terminal No.	STOP	FF	REW	FR SEARCH		PB	PICTURE SEARCH		PB PAUSE	SLOW	REC	REC PAUSE	STAND BY	REC	
						CUE	REVIEW		CUE	REVIEW							
SEL2	O	IC206 ①	L	H	H	* 1	* 1	* 2	* 1	* 1	H/L	* 3	* 4	L	L	* 4	
SEL1	O	IC206 ②	L	H	H	* 5	* 5	* 6	* 5	* 5	H	* 7	* 8	H	H	* 8	
DRUM ON	O	IC206⑩	L	H	H	H	H	H	H	H	H	H	H	H	H	H	
INT VD	O	IC206⑪	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	
ATF ER	I	IC206(51)	* 11	* 11	* 11	* 11	* 11	* 11	* 11	* 11	* 11	* 11	* 11	* 11	* 11	* 11	
DRUM PG	I	IC206(55)(60)	L	* 12	* 12	* 12	* 12	* 12	* 12	* 12	* 12	* 12	* 12	* 12	* 12	* 12	
DRUM FG	I	IC206(61)	L	* 13	* 13	* 13	* 13	* 13	* 13	* 13	* 13	* 13	* 13	* 13	* 13	* 13	
CAP FG	I	IC206(62)(69)	L	* 14	* 14	* 14	* 14	* 14	* 14	* 14	* 14	* 14	* 14	* 14	* 14	* 14	
CAP ER	O	IC206(65)	L	* 15	* 15	* 15	* 15	* 15	* 15	* 15	L	* 15	* 15	L	L	* 15	
DRUM ER	O	IC206(66)	L	* 16	* 16	* 16	* 16	* 16	* 16	* 16	* 16	* 16	* 16	* 16	* 16	* 16	
CAP PWM	O	IC206(67)	L	* 17	* 17	* 17	* 17	* 17	* 17	* 17	* 17	* 17	* 17	L	L	* 17	
DRUM RVS	O	IC206(68)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	(* 18)
CAP ON	O	IC206(75)	L	H	H	H	H	H	H	H	L	* 19	H	L	L	H	
CAPFWD	O	IC206(76)	L	H	L	H	L	H	H	L	L	* 20	H	L	L	H	
$\overline{\text{DRM ACCEL}}$	O	IC206 ⑤	H	H	H	H	H	H	H	H	H	* 21	H	H	H	H	
DRM BRAK	O	IC206 ⑥	L	L	L	L	L	L	L	L	L	* 22	L	L	L	L	
RF CONT	O	IC206(80)	L	* 10	* 10	* 10	* 10	* 10	* 10	* 10	* 10	* 10	* 10	* 10	* 10	* 10	

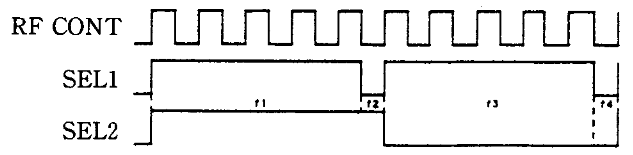
* 1, 5



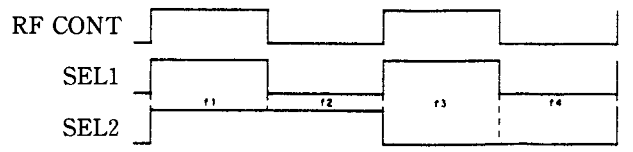
* 2, 6



* 3, 7(1/5 SLOW)



* 4, 8



* 9 : "H" pulse of 1V
* 10: Pulse of 50% 2V period Duty.
* 11: ATF error voltage
* 12: "H" pulse of 2V
* 13: Pulse of 1.4msec
* 14: Pulse with frequency in proportion to the tape speed
* 15: Pulse output of CAPSTAN rise/fall time
* 16: PWM output of 6msec of "H", "L", "Hiz" (2.5VDC)
* 17: Pulse width is varied in proportion to the PWM signal tape speed of 64msec.
* 18: Instant "H" at loading the full top tape.
* 19: "H" for the intermittent feeding tape at SLOW.
* 20: BRAKE pulse of the intermittent feeding tape at SLOW.
* 21: Acceleration of the acceleration pulse "L" for fH correction of the DRUM at SLOW.
* 22: Deceleration of the deceleration pulse "H" for fH correction of the DRUM at SLOW.

3-12. SYSTEM CONTROL — SYSTEM CONTROL PERIPHERAL CIRCUIT INTERFACE

Signal name	I/O	Terminal No.	Input-output level
$\overline{\text{TALLY}}$	O	IC206 ③	"H" at normal, "L" at the CAMERA mode with REC
TUNER ON	O	IC206 ⑦	"H" at TUNER of the INPUT mode, "L" at the other.
VIDEO ON	O	IC206⑫	"H" when the operation of VTR part of the REC • PB mode is required, "L" at the other.
SP/$\overline{\text{LP}}$	O	IC206⑮	"H" at playing back of the tape recoded in SP mode and at the SP recorded mode.
ME/$\overline{\text{MP}}$	O	IC206⑱	"L" at using the MP tape, "H" at using the ME tape.
T/E LED	O	IC206⑲	Pulse period of which pulse train is PB • REC, 100msec.. FF • REW. 4msec., CUE • REV, 8msec.
UNLD	O	IC206⑳	"L" at normal, "H" at UNTHREADING. "H" pulse at the mechanical mode transition.
LD	O	IC206㉑	"L" at normal, "H" at THREADING. "H" pulse at the mechanical mode transition.
$\overline{\text{M OUT4}}$	O	IC206㉒	"L" pulse of 19msec period.
$\overline{\text{M OUT3}}$	O	IC206㉓	"L" pulse of 19msec period.
M OUT2	O	IC206㉔	"H" pulse of 19msec period.
M OUT1	O	IC206㉕	"H" pulse of 19msec period.
$\overline{\text{M OUT0}}$	O	IC206㉖	"L" pulse of 2msec period.
$\overline{\text{POW ON}}$	O	IC206㉗	"L" at turning ON the power.
$\overline{\text{CAMERA ON}}$	O	IC206㉘	"L" in the camera mode.
$\overline{\text{(POWER)BATT LED}}$	O	IC206㉙	"L" at lightening POWER LED, L pulse train at warning BATTERY DOWN.
$\overline{\text{REC LED}}$	O	IC206㉚	"L" at REC
$\overline{\text{CC RESET}}$	I	IC206㉜	"H" at normal, "L" at reset
SYSCON CS	I	IC206㊱	"L" pulse train of 1V period
SYSCON SI	I	IC206㊲	"L" pulse train of 1V period
SYSCON SO	O	IC206㊳	"L" pulse train of 1V period
SYSCON SCK	I/O	IC206㊴	"L" pulse train of 1V period
MIN3	I	IC206㊵	Key matrix input "H" at normal, "L" pulse at input
MIN2	I	IC206㊶	Key matrix input "H" at normal, "L" pulse at input
MIN1	I	IC206㊷	Key matrix input "H" at normal, "L" pulse at input
MIN0	I	IC206㊸	Key matrix input "H" at normal, "L" pulse at input
TAPE TOP		IC206㊹	TAPE TOP determination input Pulse train of 0.5 or more at TOP, "L" at the other.
TAPE END		IC206㊺	TAPE END determination input Pulse train of 0.5 or more at TOP.
T REEL FG		IC206㊻	Pulse of 2.0Vp-p or more generated by rotation of the T REEL
S REEL FG		IC206㊼	Pulse of 2.0Vp-p or more generated by rotation of the S REEL
BATT DOWN		IC206㊿	Input by dividing the main battery. Adjust Battery Down based on this.
START/STOP		IC206(70)	"L" at pressing the camera START/STOP button, "H" at normal

Matrix table

	M IN3	M IN2	M IN1	M IN0
$\overline{\text{M OUT4}}$	REW	FF	PB	LINE STEREO
$\overline{\text{M OUT3}}$	STOP	PAUSE	REC	SW
M OUT2	TUNER/ LINE/ CAMERA	SERVICE	TEST A	TEST B
M OUT1	TEST C	TEST D	ME/MP	REC PROOF
$\overline{\text{M OUT0}}$	CC LOCK	M SW2	M SW1	M SW0

3-13. SYSTE

Signal Na
ME/$\overline{\text{MP}}$
REC PRO
TOP/END
TOP SEN
T REEL
S REEL
MODE SW
MODE SW
MODE SW
MOUT0 (C
CC DOW
END SEN

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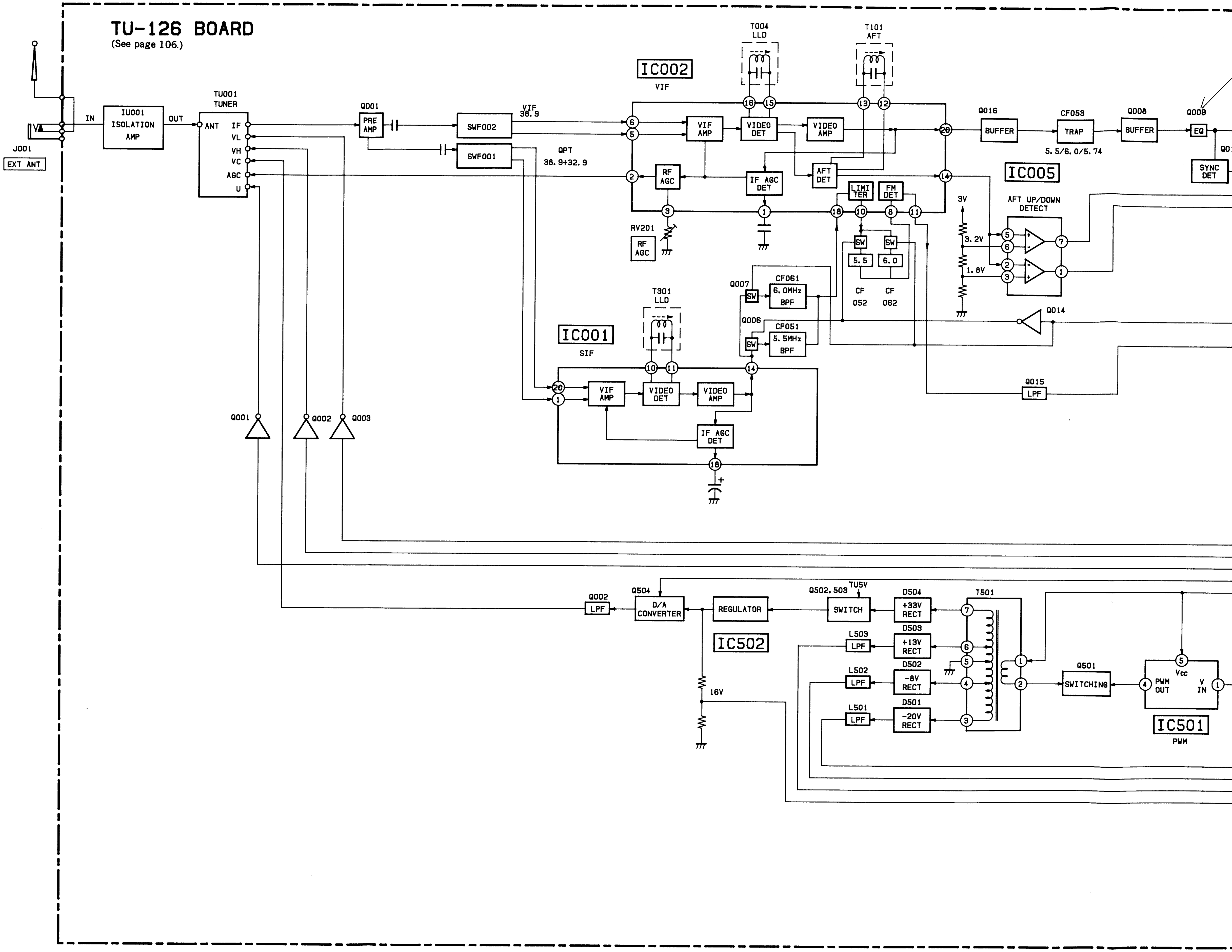
Matrix table

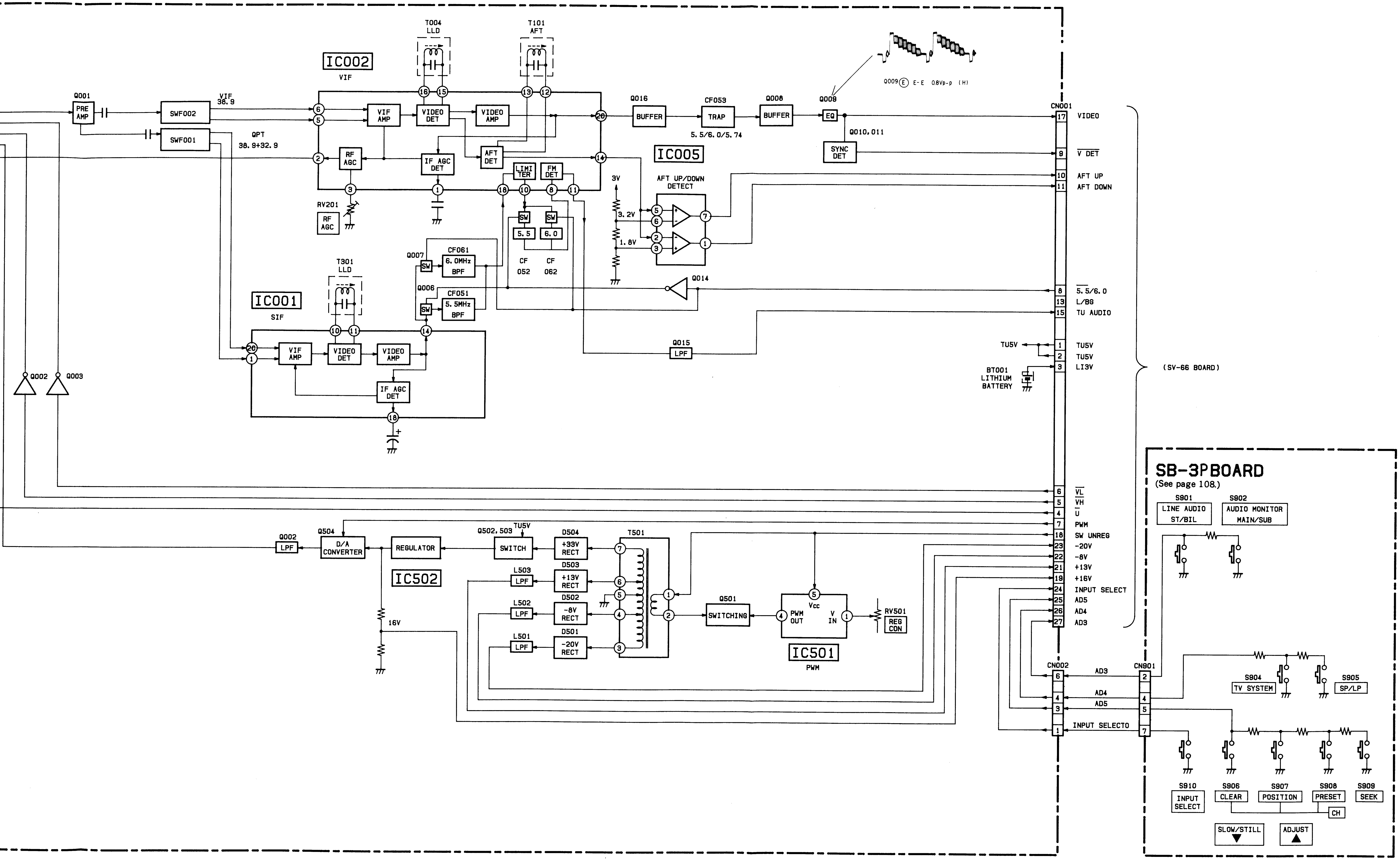
	M IN3	M IN2	M IN1	M IN0
$\overline{\text{M OUT4}}$	REW	FF	PB	LINE STEREO
$\overline{\text{M OUT3}}$	STOP	PAUSE	REC	SW
M OUT2	TUNER/ LINE/ CAMERA	SERVICE	TEST A	TEST B
M OUT1	TEST C	TEST D	ME/MP	REC PROOF
$\overline{\text{M OUT0}}$	CC LOCK	M SW2	M SW1	M SW0

3-13. SYSTEM CONTROL — MECHANISM CONTROL PART INTERFACE

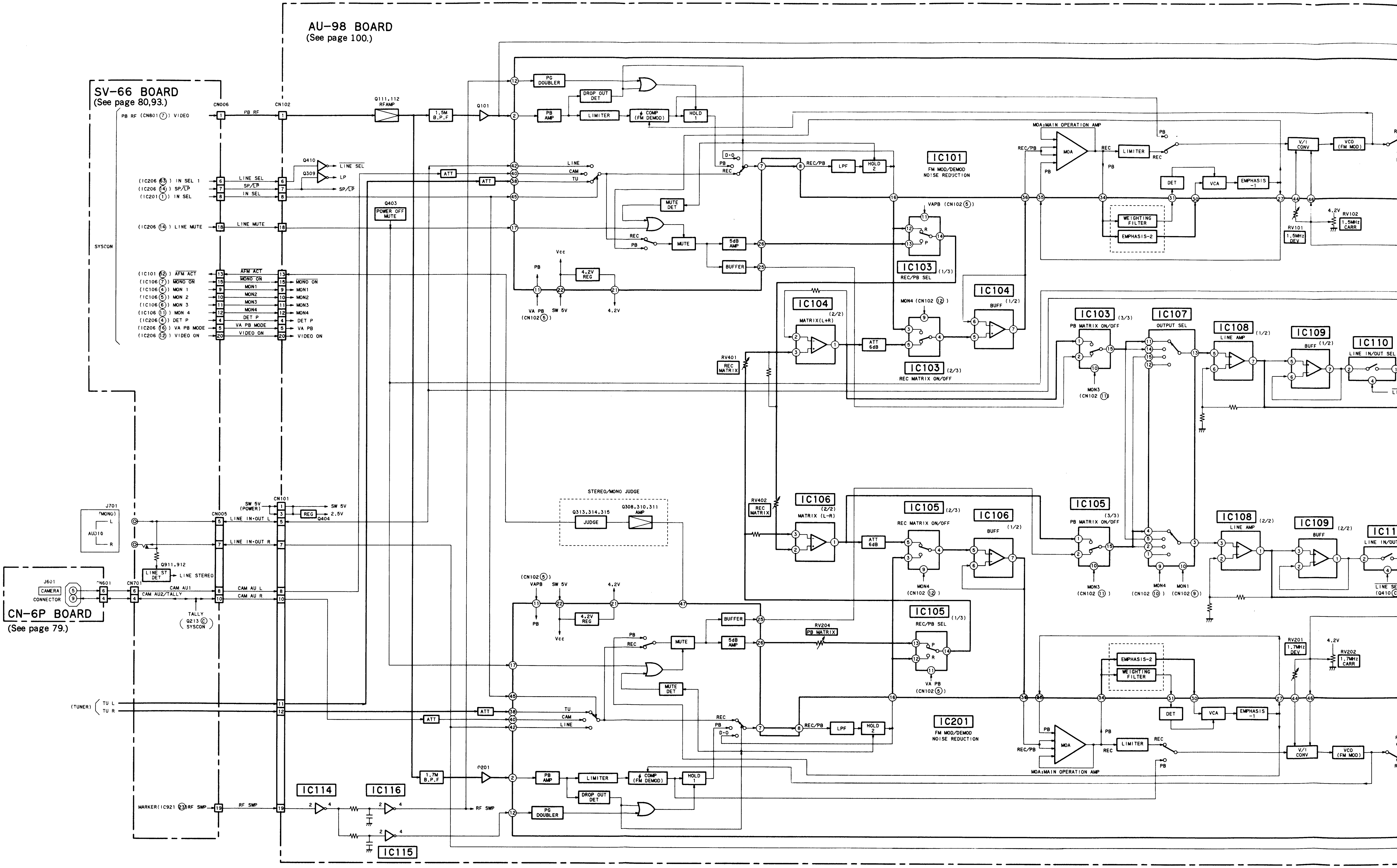
<table>
<tr><th>Signal Name</th><th>I/O</th><th>Terminal No.</th><th>Input-output Level</th></tr>
<tr><td>ME/$\overline{\text{MP}}$</td><td>I</td><td>CN001 ②</td><td>"L" pulse at using the MP tape, "H" pulse at the other (19msec period)</td></tr>
<tr><td>REC PROOF</td><td>I</td><td>CN001 ③</td><td>"L" pulse when the recording cassette is inserted, "H" pulse at the other (19msec period)</td></tr>
<tr><td>TOP/END LED</td><td>O</td><td>CN001 ④</td><td>"L" pulse of 1Vp-p, the pulse period is 100msec to 4msec</td></tr>
<tr><td>TOP SENS</td><td>I</td><td>CN001 ⑤</td><td>"L" at normal, "L" pulse at TAPE TOP and without a cassette</td></tr>
<tr><td>T REEL FG</td><td>I</td><td>CN001 ⑥</td><td>Pulse generated by the T reel rotation (2.0Vp-p or more)</td></tr>
<tr><td>S REEL FG</td><td>I</td><td>CN001 ⑨</td><td>Pulse generated by the S reel rotation (2.0Vp-p or more)</td></tr>
<tr><td>MODE SW2</td><td>I</td><td>CN001 ⑩</td><td rowspan="4">
<table>
<tr><th></th><th>EJECTED</th><th>THREADING UNTHREADING</th><th>STOP</th><th>REC/PB/FF/ REW/CEU/REV PAUSE/SLOW</th></tr>
<tr><td>M SW2 (10P-13P)</td><td>○</td><td>○</td><td>×</td><td>○</td></tr>
<tr><td>M SW1 (11P-13P)</td><td>×</td><td>○</td><td>○</td><td>×</td></tr>
<tr><td>M SW0 (12P-13P)</td><td>×</td><td>×</td><td>○</td><td>○</td></tr>
</table>
○ : Short × : Open
</td></tr>
<tr><td>MODE SW1</td><td>I</td><td>CN001⑪</td></tr>
<tr><td>MODE SW0</td><td>I</td><td>CN001⑫</td></tr>
<tr><td>MOUT0 (COM)</td><td>O</td><td>CN001⑬</td></tr>
<tr><td>CC DOWN</td><td>I</td><td>CN001⑭</td><td>Between 13P and 14P is shortened when the cassette control goes down. Between 13P and 14P is opened when the cassette control does not go down.</td></tr>
<tr><td>END SENS</td><td>I</td><td>CN001⑮</td><td>"L" pulse at normal, "H" pulse at the tape end and at having no tape.</td></tr>
</table>

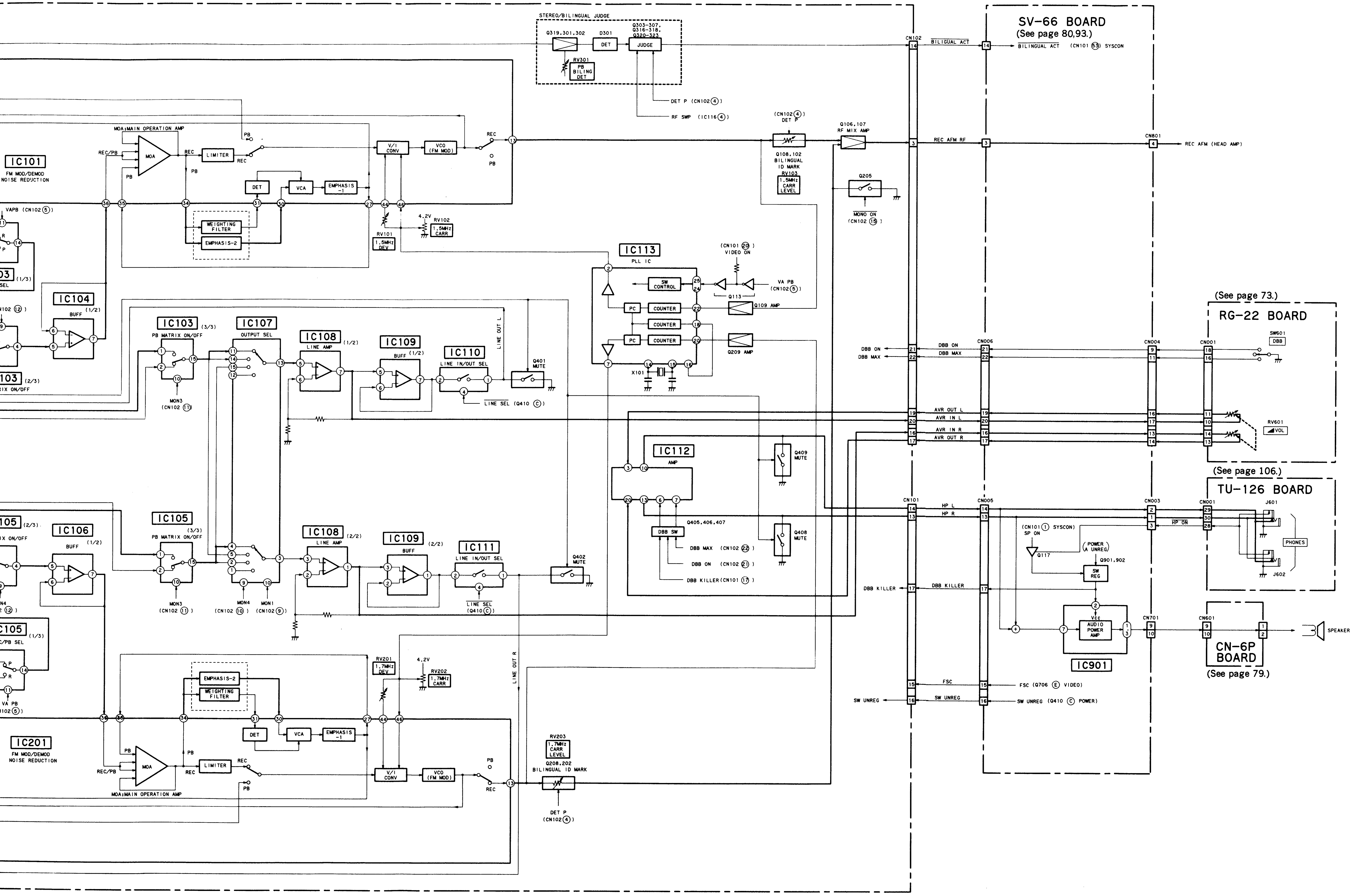
3-14. TUNER BLOCK DIAGRAM


TU-126 BOARD
(See page 106.)
J001
EXT ANT
IN
IU001
ISOLATION
AMP
OUT
TU001
TUNER
ANT
IF
VL
VH
VC
AGC
U
Q001
PRE
AMP
SWF002
SWF001
VIF
38.9
QPT
38.9+32.9
IC002
VIF
T004
LLD
T101
AFT
VIF
AMP
VIDEO
DET
VIDEO
AMP
RF
AGC
IF AGC
DET
AFT
DET
LIMI
TER
FM
DET
RV201
RF
AGC
SW
SW
5.5
6.0
CF
052
CF
062
Q016
BUFFER
CF053
TRAP
5.5/6.0/5.74
Q008
BUFFER
Q008
EQ
SYNC
DET
IC005
AFT UP/DOWN
DETECT
3V
3.2V
1.8V
Q014
Q007
CF061
6.0MHz
BPF
Q006
CF051
5.5MHz
BPF
T301
LLD
IC001
SIF
VIF
AMP
VIDEO
DET
VIDEO
AMP
IF AGC
DET
Q015
LPF
Q001
Q002
Q003
Q002
LPF
Q504
D/A
CONVERTER
REGULATOR
IC502
16V
Q502, 503
TU5V
SWITCH
D504
+33V
RECT
D503
+13V
RECT
L503
LPF
D502
-8V
RECT
L502
LPF
D501
-20V
RECT
L501
LPF
T501
Q501
SWITCHING
PWM
OUT
Vcc
V
IN
IC501
PWM


T004
LLD
T101
AFT
IC002
VIF
Q001
PRE AMP
SWF002
VIF
38.9
SWF001
QPT
38.9+32.9
VIF AMP
VIDEO DET
VIDEO AMP
RF AGC
IF AGC DET
AFT DET
LIMI TER
FM DET
RV201
RF AGC
SW
5.5
6.0
CF 052
CF 062
Q007
CF061
6.0MHz BPF
Q006
CF051
5.5MHz BPF
T301
LLD
IC001
SIF
VIF AMP
VIDEO DET
VIDEO AMP
IF AGC DET
Q002
Q003
Q016
BUFFER
CF053
TRAP
5.5/6.0/5.74
Q008
BUFFER
Q009
EQ
Q009 (E) E-E 0.8Vp-p (H)
Q010, 011
SYNC DET
IC005
AFT UP/DOWN DETECT
3V
3.2V
1.8V
Q014
Q015
LPF
CN001
17 VIDEO
9 V DET
10 AFT UP
11 AFT DOWN
8 5.5/6.0
13 L/BG
15 TU AUDIO
1 TU5V
2 TU5V
3 LI3V
TU5V
BT001 LITHIUM BATTERY
(SV-66 BOARD)
6 VL
5 VH
4 U
7 PWM
18 SW UNREG
23 -20V
22 -8V
21 +13V
19 +16V
24 INPUT SELECT
25 AD5
26 AD4
27 AD3
Q002
LPF
Q504
D/A CONVERTER
REGULATOR
IC502
16V
Q502, 503
TU5V
SWITCH
D504
+33V RECT
D503
+13V RECT
L503
LPF
D502
-8V RECT
L502
LPF
D501
-20V RECT
L501
LPF
T501
Q501
SWITCHING
Vcc
PWM OUT
V IN
IC501
PWM
RV501
REG CON
CN002
CN901
AD3
AD4
AD5
INPUT SELECTO
SB-3P BOARD
(See page 108.)
S901
LINE AUDIO ST/BIL
S902
AUDIO MONITOR MAIN/SUB
S904
TV SYSTEM
S905
SP/LP
S910
INPUT SELECT
S906
CLEAR
S907
POSITION
S908
PRESET
S909
SEEK
CH
SLOW/STILL ▼
ADJUST ▲

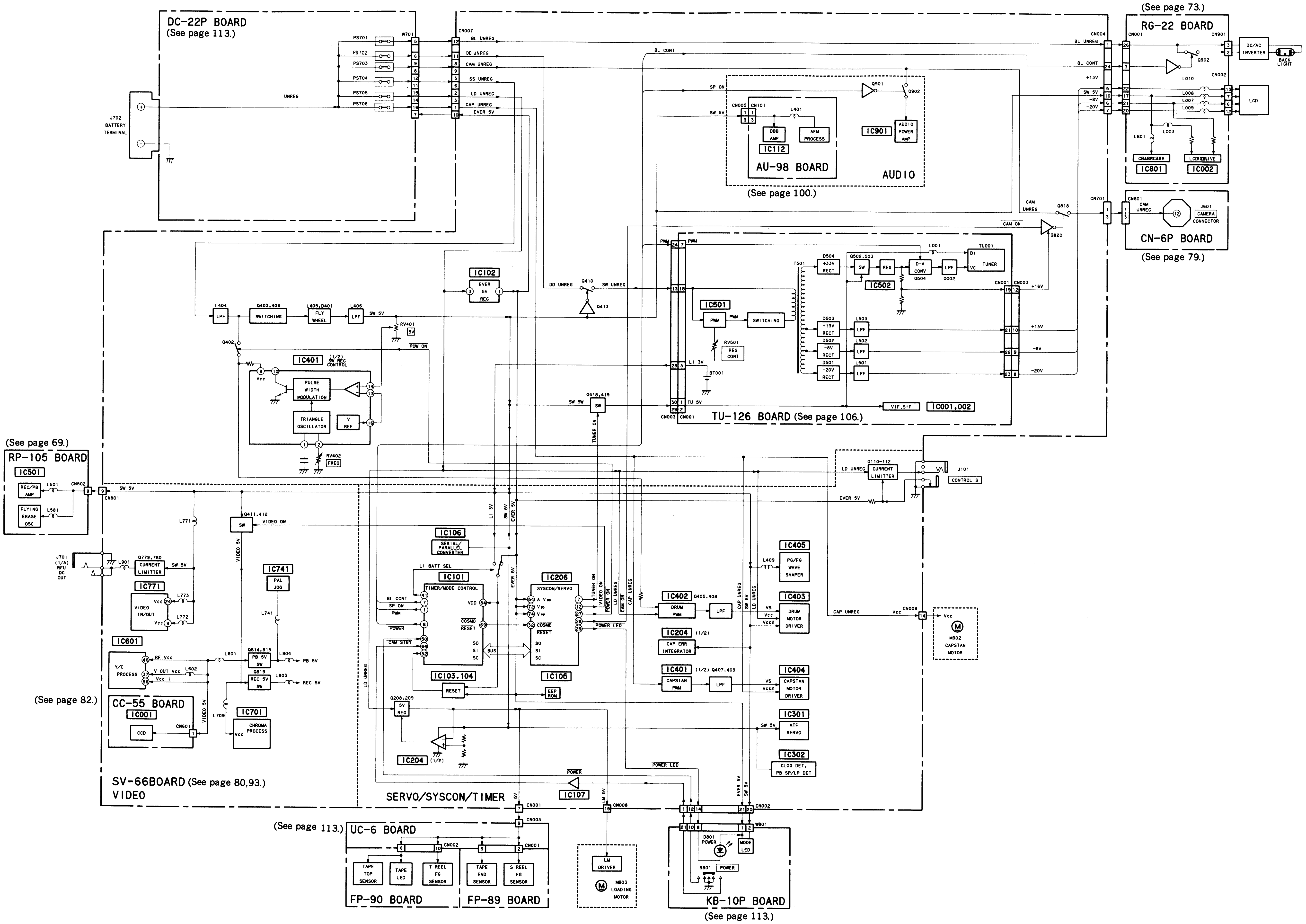
3-15. AUDIO BLOCK DIAGRAM


AU-98 BOARD
(See page 100.)
SV-66 BOARD
(See page 80,93.)
CN-6P BOARD
(See page 79.)
CN006
CN102
CN005
CN101
CN601
CN701
PB RF (CN801 ⑦) VIDEO
PB RF
(IC206 ㊳) IN SEL 1
(IC206 ⑭) SP/LP
(IC201 ①) IN SEL
(IC206 ⑭) LINE MUTE
SYSCON
LINE SEL
SP/LP
IN SEL
LINE MUTE
(IC101 ㊷) AFM ACT
(IC106 ⑦) MONO ON
(IC106 ④) MON 1
(IC106 ⑤) MON 2
(IC106 ⑥) MON 3
(IC106 ⑪) MON 4
(IC206 ④) DET P
(IC206 ⑯) VA PB MODE
(IC206 ⑫) VIDEO ON
AFM ACT
MONO ON
MON1
MON2
MON3
MON4
DET P
VA PB MODE
VIDEO ON
VA PB
Q410
Q309
LINE SEL
LP
SP/LP
Q403
POWER OFF MUTE
Q111,112 RFAMP
1.5M B.P.F
Q101
PG DOUBLER
DROP OUT DET
PB AMP
LIMITER
COMP (FM DEMOD)
HOLD 1
ATT
LINE
CAM
TU
MUTE DET
REC
PB
MUTE
5dB AMP
BUFFER
D·O
LPF
HOLD 2
REC/PB
Vcc
4.2V REG
VA PB (CN102 ⑤)
SW 5V
4.2V
IC101
FM MOD/DEMOD NOISE REDUCTION
VAPB (CN102 ⑤)
IC103 (1/3)
REC/PB SEL
IC104 (2/2)
MATRIX (L+R)
RV401 REC MATRIX
ATT 6dB
MON4 (CN102 ⑫)
IC103 (2/3)
REC MATRIX ON/OFF
IC104 (1/2)
BUFF
MOA: MAIN OPERATION AMP
MOA
DET
VCA
EMPHASIS -1
WEIGHTING FILTER
EMPHASIS-2
V/I CONV
VCO (FM MOD)
RV101 1.5MHz DEV
4.2V
RV102 1.5MHz CARR
IC103 (3/3)
PB MATRIX ON/OFF
IC107
OUTPUT SEL
MON3 (CN102 ⑪)
IC108 (1/2)
LINE AMP
IC109 (1/2)
BUFF
IC110
LINE IN/OUT SEL
J701 (MONO)
AUDIO L R
Q911,912
LINE ST DET
LINE STEREO
SW 5V (POWER)
REG
Q404
SW 5V
2.5V
LINE IN-OUT L
LINE IN-OUT R
J601 CAMERA CONNECTOR
CAM AU1
CAM AU2/TALLY
CAM AU L
CAM AU R
TALLY (Q213 Ⓒ SYSCON)
STEREO/MONO JUDGE
Q313,314,315 JUDGE
Q308,310,311 AMP
RV402 REC MATRIX
IC106 (2/2)
MATRIX (L-R)
IC105 (2/3)
REC MATRIX ON/OFF
IC106 (1/2)
BUFF
MON4 (CN102 ⑫)
IC105 (3/3)
PB MATRIX ON/OFF
MON3 (CN102 ⑪)
MON4 (CN102 ⑩)
MON1 (CN102 ⑨)
IC108 (2/2)
LINE AMP
IC109 (2/2)
BUFF
IC11
LINE IN/OUT
LINE SEL (Q410 Ⓒ
(CN102 ⑤) VAPB
IC105 (1/3)
REC/PB SEL
RV204 PB MATRIX
VA PB (CN102 ⑤)
RV201 1.7MHz DEV
RV202 1.7MHz CARR
IC201
FM MOD/DEMOD NOISE REDUCTION
(TUNER) TU L TU R
Q201
1.7M B.P.F
MARKER (IC921 ㉓) RF SWP
RF SWP
IC114
IC116
IC115



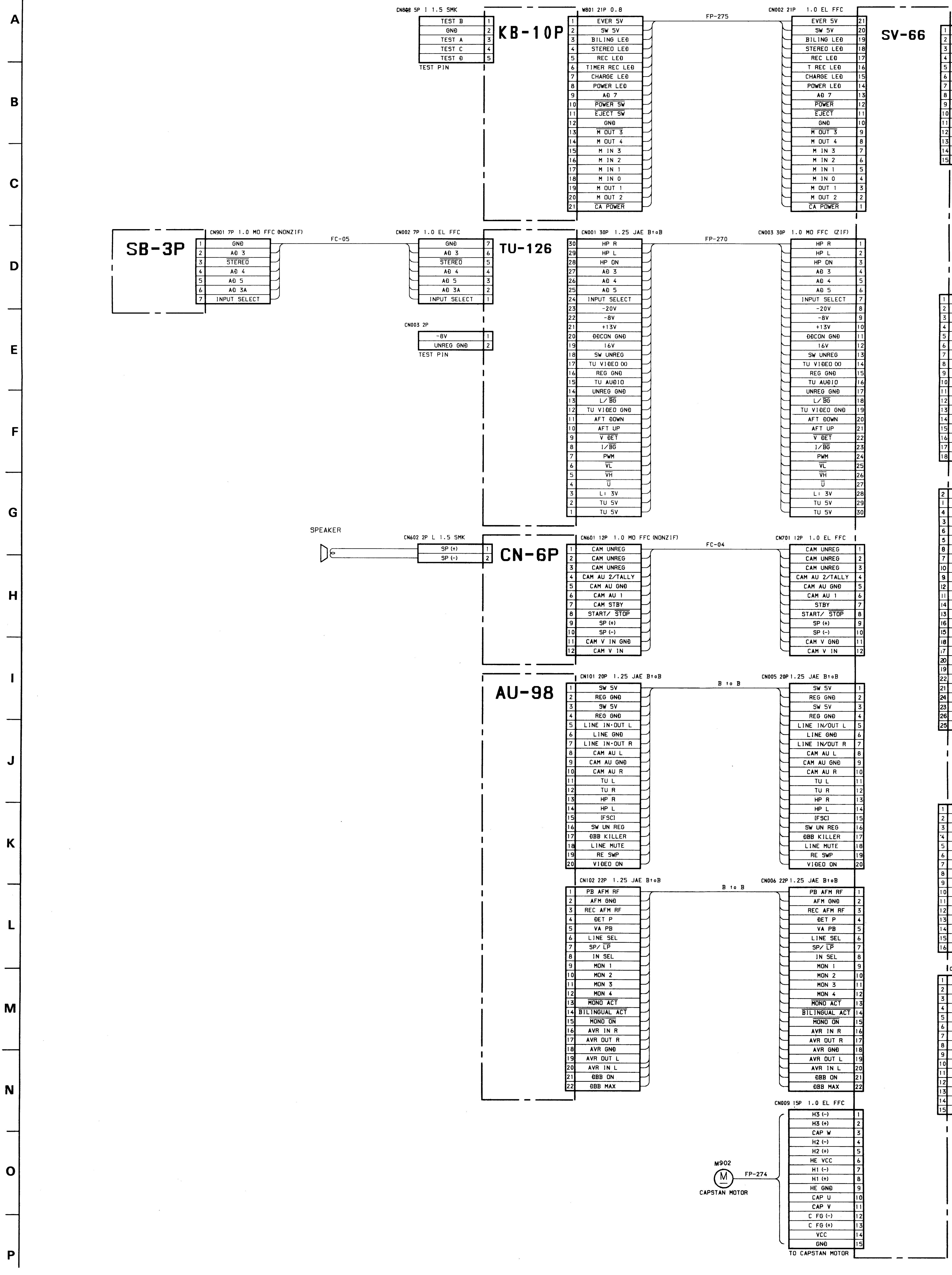
SV-66 BOARD
(See page 80,93.)
BILINGUAL ACT (CN101 53) SYSCON
STEREO/BILINGUAL JUDGE
Q319,301,302
D301
DET
Q303-307, Q316-318, Q320-323
JUDGE
RV301 PB BILING DET
DET P (CN102 ④)
RF SWP (IC116 ④)
CN102
BILIGUAL ACT
MOA:MAIN OPERATION AMP
IC101
FM MOD/DEMOD NOISE REDUCTION
REC/PB
MOA
LIMITER
REC
PB
V/I CONV
VCO (FM MOD)
DET
VCA
EMPHASIS -1
WEIGHTING FILTER
EMPHASIS-2
VAPB (CN102 ⑤)
RV101 1.5MHz DEV
4.2V
RV102 1.5MHz CARR
(CN102 ④) DET P
Q106,107 RF MIX AMP
Q108,102 BILINGUAL ID MARK
RV103 1.5MHz CARR LEVEL
Q205
MONO ON (CN102 ⑮)
REC AFM RF
CN801
REC AFM (HEAD AMP)
IC104 (1/2) BUFF
IC103 (3/3) PB MATRIX ON/OFF
IC107 OUTPUT SEL
IC108 (1/2) LINE AMP
IC109 (1/2) BUFF
IC110 LINE IN/OUT SEL
LINE OUT L
Q401 MUTE
LINE SEL (Q410 ©)
MON3 (CN102 ⑪)
IC113 PLL IC
SW CONTROL
PC
COUNTER
(CN101 ⑳) VIDEO ON
Q113
VA PB (CN102 ⑤)
Q109 AMP
Q209 AMP
X101
DBB ON
DBB MAX
CN006
CN004
CN001
(See page 73.)
RG-22 BOARD
SW601 DBB
RV601 VOL
AVR OUT L
AVR IN L
AVR IN R
AVR OUT R
IC112 AMP
Q409 MUTE
Q408 MUTE
Q405,406,407
DBB SW
DBB MAX (CN102 ㉒)
DBB ON (CN102 ㉑)
DBB KILLER (CN101 ⑰)
CN101
CN005
CN003
HP L
HP R
HP ON
(See page 106.)
TU-126 BOARD
J601
PHONES
J602
(CN101 ①) SYSCON) SP ON
Q117
(POWER (A UNREG)
Q901,902
SW REG
DBB KILLER
IC901
AUDIO POWER AMP
Vcc
CN701
CN601
SPEAKER
CN-6P BOARD
(See page 79.)
FSC
FSC (Q706 Ⓔ VIDEO)
SW UNREG
SW UNREG (Q410 © POWER)
IC105 (2/3) PB MATRIX ON/OFF
IC106 (1/2) BUFF
IC105 (3/3) PB MATRIX ON/OFF
IC105 (1/3)
MON4 (CN102 ⑫)
MON3 (CN102 ⑪)
MON4 (CN102 ⑩)
MON1 (CN102 ⑨)
IC108 (2/2) LINE AMP
IC109 (2/2) BUFF
IC111 LINE IN/OUT SEL
LINE SEL (Q410 ©)
Q402 MUTE
LINE OUT R
RV201 1.7MHz DEV
RV202 1.7MHz CARR
VA PB (CN102 ⑤)
IC201
FM MOD/DEMOD NOISE REDUCTION
MOA:MAIN OPERATION AMP
RV203 1.7MHz CARR LEVEL
Q208,202 BILINGUAL ID MARK
DET P (CN102 ④)

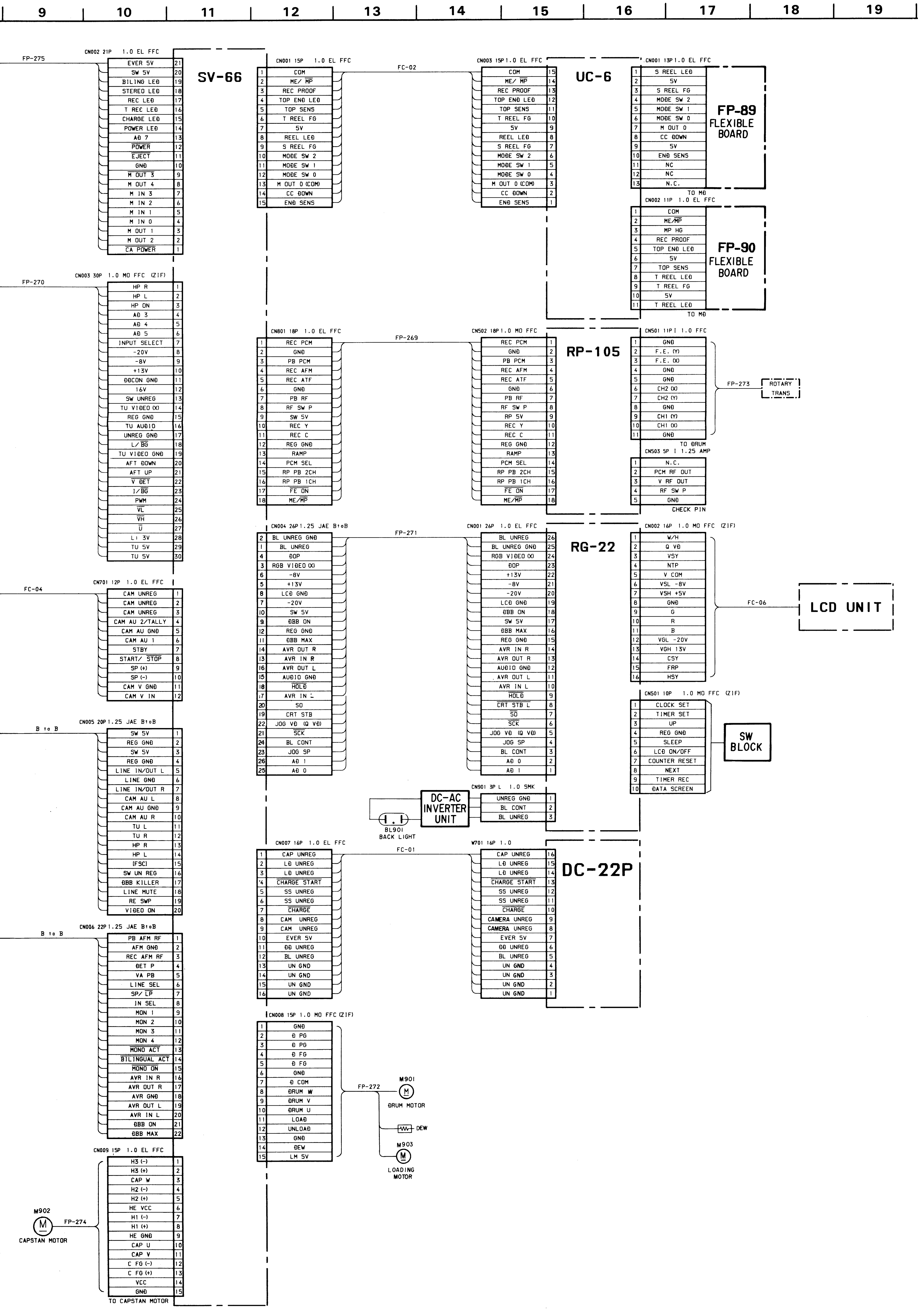
3-16. POWER BLOCK DIAGRAM


DC-22P BOARD
(See page 113.)
J702 BATTERY TERMINAL
UNREG
PS701
PS702
PS703
PS704
PS705
PS706
W701
CN007
BL UNREG
DD UNREG
CAM UNREG
SS UNREG
LD UNREG
CAP UNREG
EVER 5V
BL CONT
SP ON
SW 5V
AU-98 BOARD
(See page 100.)
AUDIO
IC112
DBB AMP
AFM PROCESS
IC901
AUDIO POWER AMP
Q901
Q902
(See page 73.)
RG-22 BOARD
DC/AC INVERTER
BACK LIGHT
LCD
IC801
IC002
CN-6P BOARD
(See page 79.)
J601 CAMERA CONNECTOR
CAM UNREG
CAM ON
Q818
Q820
TU-126 BOARD (See page 106.)
IC501
PWM
SWITCHING
RV501 REG CONT
IC502
TUNER
D-A CONV
LPF
+16V
+13V
-8V
-20V
VIF,SIF
IC001,002
TU 5V
L1 3V
BT001
IC102
EVER 5V REG
DD UNREG
Q410
SW UNREG
Q413
Q418,419
SW 5W
TUNER ON
L404
LPF
Q403,404
SWITCHING
L405,D401
FLY WHEEL
L406
RV401
POW ON
Q402
IC401 (1/2) SW REG CONTROL
PULSE WIDTH MODULATION
TRIANGLE OSCILLATOR
V REF
RV402 FREQ
(See page 69.)
RP-105 BOARD
IC501
REC/PB AMP
FLYING ERASE OSC
CN502
CN601
J701 (1/3) RFU DC OUT
Q779,780 CURRENT LIMITTER
IC771
VIDEO IN/OUT
Q411,412
VIDEO ON
IC741
PAL JOG
IC601
Y/C PROCESS
RF Vcc
V OUT Vcc
Q814,815 PB 5V SW
Q819 REC 5V SW
PB 5V
REC 5V
(See page 82.)
CC-55 BOARD
IC001
CCD
IC701
CHROMA PROCESS
SV-66BOARD (See page 80,93.)
VIDEO
IC106
SERIAL/PARALLEL CONVERTER
L1 BATT SEL
IC101
TIMER/MODE CONTROL
COSMO RESET
IC206
SYSCON/SERVO
IC103,104
RESET
IC105
EEP ROM
Q208,209
5V REG
IC204 (1/2)
IC107
POWER
POWER LED
SERVO/SYSCON/TIMER
Q110-112
CURRENT LIMITTER
J101
CONTROL S
IC405
PG/FG WAVE SHAPER
IC402 Q405,408
DRUM PWM
IC403
DRUM MOTOR DRIVER
IC204 (1/2)
CAP ERR INTEGRATOR
IC401 (1/2) Q407,409
CAPSTAN PWM
IC404
CAPSTAN MOTOR DRIVER
IC301
ATF SERVO
IC302
CLOG DET, PB SP/LP DET
CAP UNREG
CN009
M902 CAPSTAN MOTOR
(See page 113.)
UC-6 BOARD
TAPE TOP SENSOR
TAPE LED
T REEL FG SENSOR
TAPE END SENSOR
S REEL FG SENSOR
FP-90 BOARD
FP-89 BOARD
CN008
LM DRIVER
M903 LOADING MOTOR
CN002
W801
D801 POWER
MODE LED
S801 POWER
KB-10P BOARD
(See page 113.)

SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM


KB-10P
CN803 5P 1 1.5 SMK
1 TEST B
2 GND
3 TEST A
4 TEST C
5 TEST D
TEST PIN
W801 21P 0.8
1 EVER 5V
2 SW 5V
3 BILING LED
4 STEREO LED
5 REC LED
6 TIMER REC LED
7 CHARGE LED
8 POWER LED
9 AD 7
10 POWER SW
11 EJECT SW
12 GND
13 M OUT 3
14 M OUT 4
15 M IN 3
16 M IN 2
17 M IN 1
18 M IN 0
19 M OUT 1
20 M OUT 2
21 CA POWER
FP-275
CN002 21P 1.0 EL FFC
21 EVER 5V
20 SW 5V
19 BILING LED
18 STEREO LED
17 REC LED
16 T REC LED
15 CHARGE LED
14 POWER LED
13 AD 7
12 POWER
11 EJECT
10 GND
9 M OUT 3
8 M OUT 4
7 M IN 3
6 M IN 2
5 M IN 1
4 M IN 0
3 M OUT 1
2 M OUT 2
1 CA POWER
SV-66
SB-3P
CN901 7P 1.0 MO FFC (NONZIF)
1 GND
2 AD 3
3 STEREO
4 AD 4
5 AD 5
6 AD 3A
7 INPUT SELECT
FC-05
CN002 7P 1.0 EL FFC
7 GND
6 AD 3
5 STEREO
4 AD 4
3 AD 5
2 AD 3A
1 INPUT SELECT
TU-126
CN003 2P
1 -8V
2 UNREG GND
TEST PIN
CN001 30P 1.25 JAE BtoB
30 HP R
29 HP L
28 HP ON
27 AD 3
26 AD 4
25 AD 5
24 INPUT SELECT
23 -20V
22 -8V
21 +13V
20 DDCON GND
19 16V
18 SW UNREG
17 TU VIDEO (X)
16 REG GND
15 TU AUDIO
14 UNREG GND
13 L/BG
12 TU VIDEO GND
11 AFT DOWN
10 AFT UP
9 V DET
8 I/BG
7 PWM
6 VL
5 VH
4 U
3 LI 3V
2 TU 5V
1 TU 5V
FP-270
CN003 30P 1.0 MO FFC (ZIF)
1 HP R
2 HP L
3 HP ON
4 AD 3
5 AD 4
6 AD 5
7 INPUT SELECT
8 -20V
9 -8V
10 +13V
11 DDCON GND
12 16V
13 SW UNREG
14 TU VIDEO (X)
15 REG GND
16 TU AUDIO
17 UNREG GND
18 L/BG
19 TU VIDEO GND
20 AFT DOWN
21 AFT UP
22 V DET
23 I/BG
24 PWM
25 VL
26 VH
27 U
28 LI 3V
29 TU 5V
30 TU 5V
SPEAKER
CN602 2P L 1.5 SMK
1 SP (+)
2 SP (-)
CN-6P
CN601 12P 1.0 MO FFC (NONZIF)
1 CAM UNREG
2 CAM UNREG
3 CAM UNREG
4 CAM AU 2/TALLY
5 CAM AU GND
6 CAM AU 1
7 CAM STBY
8 START/STOP
9 SP (+)
10 SP (-)
11 CAM V IN GND
12 CAM V IN
FC-04
CN701 12P 1.0 EL FFC
1 CAM UNREG
2 CAM UNREG
3 CAM UNREG
4 CAM AU 2/TALLY
5 CAM AU GND
6 CAM AU 1
7 STBY
8 START/STOP
9 SP (+)
10 SP (-)
11 CAM V GND
12 CAM V IN
AU-98
CN101 20P 1.25 JAE BtoB
1 SW 5V
2 REG GND
3 SW 5V
4 REG GND
5 LINE IN・OUT L
6 LINE GND
7 LINE IN・OUT R
8 CAM AU L
9 CAM AU GND
10 CAM AU R
11 TU L
12 TU R
13 HP R
14 HP L
15 (FSC)
16 SW UN REG
17 DBB KILLER
18 LINE MUTE
19 RE SWP
20 VIDEO ON
B to B
CN005 20P 1.25 JAE BtoB
1 SW 5V
2 REG GND
3 SW 5V
4 REG GND
5 LINE IN/OUT L
6 LINE GND
7 LINE IN/OUT R
8 CAM AU L
9 CAM AU GND
10 CAM AU R
11 TU L
12 TU R
13 HP R
14 HP L
15 (FSC)
16 SW UN REG
17 DBB KILLER
18 LINE MUTE
19 RE SWP
20 VIDEO ON
CN102 22P 1.25 JAE BtoB
1 PB AFM RF
2 AFM GND
3 REC AFM RF
4 DET P
5 VA PB
6 LINE SEL
7 SP/LP
8 IN SEL
9 MON 1
10 MON 2
11 MON 3
12 MON 4
13 MONO ACT
14 BILINGUAL ACT
15 MONO ON
16 AVR IN R
17 AVR OUT R
18 AVR GND
19 AVR OUT L
20 AVR IN L
21 DBB ON
22 DBB MAX
B to B
CN006 22P 1.25 JAE BtoB
1 PB AFM RF
2 AFM GND
3 REC AFM RF
4 DET P
5 VA PB
6 LINE SEL
7 SP/LP
8 IN SEL
9 MON 1
10 MON 2
11 MON 3
12 MON 4
13 MONO ACT
14 BILINGUAL ACT
15 MONO ON
16 AVR IN R
17 AVR OUT R
18 AVR GND
19 AVR OUT L
20 AVR IN L
21 DBB ON
22 DBB MAX
CN009 15P 1.0 EL FFC
1 H3 (-)
2 H3 (+)
3 CAP W
4 H2 (-)
5 H2 (+)
6 HE VCC
7 H1 (-)
8 H1 (+)
9 HE GND
10 CAP U
11 CAP V
12 C FG (-)
13 C FG (+)
14 VCC
15 GND
TO CAPSTAN MOTOR
M902
M
FP-274
CAPSTAN MOTOR


9
10
11
12
13
14
15
16
17
18
19
FP-275
CN002 21P 1.0 EL FFC
EVER 5V 21
SW 5V 20
BILING LED 19
STEREO LED 18
REC LED 17
T REC LED 16
CHARGE LED 15
POWER LED 14
AD 7 13
POWER 12
EJECT 11
GND 10
M OUT 3 9
M OUT 4 8
M IN 3 7
M IN 2 6
M IN 1 5
M IN 0 4
M OUT 1 3
M OUT 2 2
CA POWER 1
SV-66
FP-270
CN003 30P 1.0 MO FFC (ZIF)
HP R 1
HP L 2
HP ON 3
AD 3 4
AD 4 5
AD 5 6
INPUT SELECT 7
-20V 8
-8V 9
+13V 10
DDCON GND 11
16V 12
SW UNREG 13
TU VIDEO (X) 14
REG GND 15
TU AUDIO 16
UNREG GND 17
L/BG 18
TU VIDEO GND 19
AFT DOWN 20
AFT UP 21
V DET 22
I/BG 23
PWM 24
VL 25
VH 26
U 27
LI 3V 28
TU 5V 29
TU 5V 30
FC-04
CN701 12P 1.0 EL FFC
CAM UNREG 1
CAM UNREG 2
CAM UNREG 3
CAM AU 2/TALLY 4
CAM AU GND 5
CAM AU 1 6
STBY 7
START/ STOP 8
SP (+) 9
SP (-) 10
CAM V GND 11
CAM V IN 12
B to B
CN005 20P 1.25 JAE BtoB
SW 5V 1
REG GND 2
SW 5V 3
REG GND 4
LINE IN/OUT L 5
LINE GND 6
LINE IN/OUT R 7
CAM AU L 8
CAM AU GND 9
CAM AU R 10
TU L 11
TU R 12
HP R 13
HP L 14
(FSC) 15
SW UN REG 16
DBB KILLER 17
LINE MUTE 18
RE SWP 19
VIDEO ON 20
B to B
CN006 22P 1.25 JAE BtoB
PB AFM RF 1
AFM GND 2
REC AFM RF 3
DET P 4
VA PB 5
LINE SEL 6
SP/ LP 7
IN SEL 8
MON 1 9
MON 2 10
MON 3 11
MON 4 12
MONO ACT 13
BILINGUAL ACT 14
MONO ON 15
AVR IN R 16
AVR OUT R 17
AVR GND 18
AVR OUT L 19
AVR IN L 20
DBB ON 21
DBB MAX 22
CN009 15P 1.0 EL FFC
H3 (-) 1
H3 (+) 2
CAP W 3
H2 (-) 4
H2 (+) 5
HE VCC 6
H1 (-) 7
H1 (+) 8
HE GND 9
CAP U 10
CAP V 11
C FG (-) 12
C FG (+) 13
VCC 14
GND 15
TO CAPSTAN MOTOR
M902
M
FP-274
CAPSTAN MOTOR
CN001 15P 1.0 EL FFC
1 COM
2 ME/ MP
3 REC PROOF
4 TOP END LED
5 TOP SENS
6 T REEL FG
7 5V
8 REEL LED
9 S REEL FG
10 MODE SW 2
11 MODE SW 1
12 MODE SW 0
13 M OUT 0 (COM)
14 CC DOWN
15 END SENS
FC-02
CN003 15P 1.0 EL FFC
COM 15
ME/ MP 14
REC PROOF 13
TOP END LED 12
TOP SENS 11
T REEL FG 10
5V 9
REEL LED 8
S REEL FG 7
MODE SW 2 6
MODE SW 1 5
MODE SW 0 4
M OUT 0 (COM) 3
CC DOWN 2
END SENS 1
UC-6
CN001 13P 1.0 EL FFC
1 S REEL LED
2 5V
3 S REEL FG
4 MODE SW 2
5 MODE SW 1
6 MODE SW 0
7 M OUT 0
8 CC DOWN
9 5V
10 END SENS
11 NC
12 NC
13 N.C.
FP-89
FLEXIBLE BOARD
TO MD
CN002 11P 1.0 EL FFC
1 COM
2 ME/MP
3 MP HG
4 REC PROOF
5 TOP END LED
6 5V
7 TOP SENS
8 T REEL LED
9 T REEL FG
10 5V
11 T REEL LED
FP-90
FLEXIBLE BOARD
TO MD
CN801 18P 1.0 EL FFC
1 REC PCM
2 GND
3 PB PCM
4 REC AFM
5 REC ATF
6 GND
7 PB RF
8 RF SW P
9 SW 5V
10 REC Y
11 REC C
12 REG GND
13 RAMP
14 PCM SEL
15 RP PB 2CH
16 RP PB 1CH
17 FE ON
18 ME/MP
FP-269
CN502 18P 1.0 MO FFC
REC PCM 1
GND 2
PB PCM 3
REC AFM 4
REC ATF 5
GND 6
PB RF 7
RF SW P 8
RP 5V 9
REC Y 10
REC C 11
REG GND 12
RAMP 13
PCM SEL 14
RP PB 2CH 15
RP PB 1CH 16
FE ON 17
ME/MP 18
RP-105
CN501 11P 1.0 FFC
1 GND
2 F.E. (Y)
3 F.E. (X)
4 GND
5 GND
6 CH2 (X)
7 CH2 (Y)
8 GND
9 CH1 (Y)
10 CH1 (X)
11 GND
TO DRUM
FP-273
ROTARY TRANS
CN503 5P 1.25 AMP
1 N.C.
2 PCM RF OUT
3 V RF OUT
4 RF SW P
5 GND
CHECK PIN
CN004 26P 1.25 JAE BtoB
2 BL UNREG GND
1 BL UNREG
4 DDP
3 RGB VIDEO (X)
6 -8V
5 +13V
8 LCD GND
7 -20V
10 SW 5V
9 DBB ON
12 REG GND
11 DBB MAX
14 AVR OUT R
13 AVR IN R
16 AVR OUT L
15 AUDIO GND
18 HOLD
17 AVR IN L
20 SO
19 CRT STB
22 JOG VD (Q VD)
21 SCK
24 BL CONT
23 JOG SP
26 AD 1
25 AD 0
FP-271
CN001 26P 1.0 EL FFC
BL UNREG 26
BL UNREG GND 25
RGB VIDEO (X) 24
DDP 23
+13V 22
-8V 21
-20V 20
LCD GND 19
DBB ON 18
SW 5V 17
DBB MAX 16
REG GND 15
AVR IN R 14
AVR OUT R 13
AUDIO GND 12
AVR OUT L 11
AVR IN L 10
HOLD 9
CRT STB L 8
SO 7
SCK 6
JOG VD (Q VD) 5
JOG SP 4
BL CONT 3
AD 0 2
AD 1 1
RG-22
CN002 16P 1.0 MO FFC (ZIF)
1 W/H
2 Q VD
3 VSY
4 NTP
5 V COM
6 VSL -8V
7 VSH +5V
8 GND
9 G
10 R
11 B
12 VGL -20V
13 VGH 13V
14 CSY
15 FRP
16 HSY
FC-06
LCD UNIT
CN501 10P 1.0 MO FFC (ZIF)
1 CLOCK SET
2 TIMER SET
3 UP
4 REG GND
5 SLEEP
6 LCD ON/OFF
7 COUNTER RESET
8 NEXT
9 TIMER REC
10 DATA SCREEN
SW BLOCK
CN901 3P L 1.0 SMK
UNREG GND 1
BL CONT 2
BL UNREG 3
DC-AC INVERTER UNIT
BL901 BACK LIGHT
CN007 16P 1.0 EL FFC
1 CAP UNREG
2 LD UNREG
3 LD UNREG
4 CHARGE START
5 SS UNREG
6 SS UNREG
7 CHARGE
8 CAM UNREG
9 CAM UNREG
10 EVER 5V
11 DD UNREG
12 BL UNREG
13 UN GND
14 UN GND
15 UN GND
16 UN GND
FC-01
W701 16P 1.0
CAP UNREG 16
LD UNREG 15
LD UNREG 14
CHARGE START 13
SS UNREG 12
SS UNREG 11
CHARGE 10
CAMERA UNREG 9
CAMERA UNREG 8
EVER 5V 7
DD UNREG 6
BL UNREG 5
UN GND 4
UN GND 3
UN GND 2
UN GND 1
DC-22P
CN008 15P 1.0 MO FFC (ZIF)
1 GND
2 D PG
3 D PG
4 D FG
5 D FG
6 GND
7 D COM
8 DRUM W
9 DRUM V
10 DRUM U
11 LOAD
12 UNLOAD
13 GND
14 DEW
15 LM 5V
FP-272
M901
M
DRUM MOTOR
DEW
M903
M
LOADING MOTOR

4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

- **For printed wiring boards.**
- ● : Through hole.
- ▩ : Pattern from the side which enables seeing.
- ░ : Pattern of the rear side.
- Circled numbers refer to waveforms.
- The part codes and the part names for correction of the semiconductor on the print board are described in the space of each print figure. Please use it when ordering parts.

- **For schematic diagram.**
- **Caution when replacing chip parts.**
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, 1/4W or less unless otherwise noted.
  kΩ: 1000Ω, MΩ: 1000kΩ.

- **All capacitors are in μF unless otherwise noted. pF : μμF.**
  50V or less are not indicated except for electrolytics and tantalums.
- **All variable and adjustable resistors have characteristic curve B, unless otherwise noted.**
- ▭ : nonflammable resistor.
- ▭ : fusible resistor.
- ▭ : panel designation.
- △ : internal component.
- ▭ : adjustment for repair.
- ━━ : B + Line
- ‒ ‒ ‒ : B – Line.
- Circled numbers refer to waveforms.
- ⇨ : IN/OUT direction of B (+, –) line.
- The voltage value is the reference value to the ground when the color bar signal (RF signal) is input tuner from the color bar generator. (Tester for use : DC10mΩ)
- When measuring the SV-66 board, the measurement is performed without the AU-98 board.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

[TEST MODE]
This unit selects the test mode by shorting and openting the terminals of CN802 on the KB-10P BOARD. When servicing, attaching the "test mode set jig" (J-6082-110-A) to the CN802 allows to select twelve types of test mode with the hexadecimal selecting switches.
See to"3-8. Test Mode" on page 41 for details.

IC

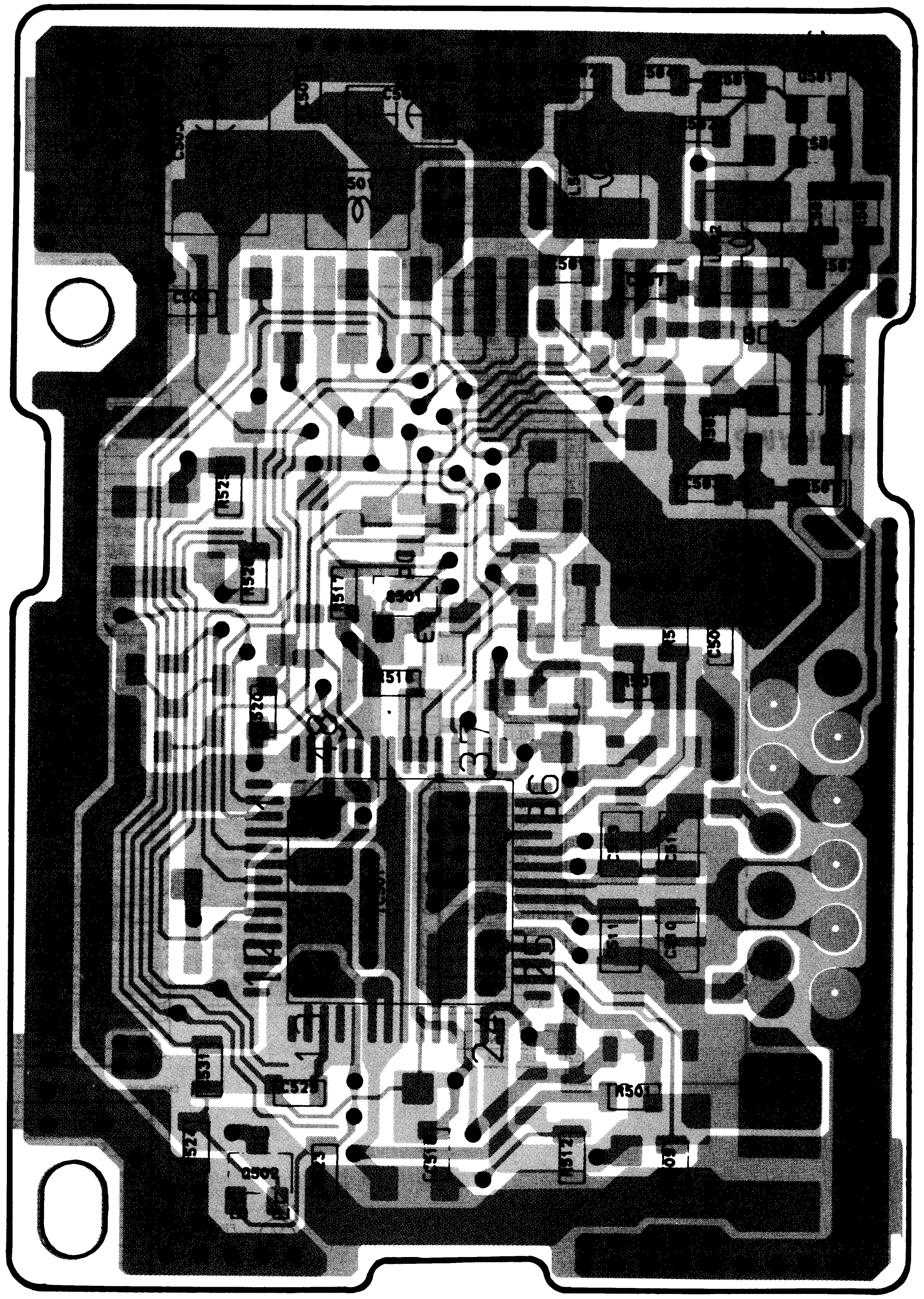
IC501	8-752-033-38	IC CXA1202R

TRANSISTOR

Q501	8-729-905-12	TRANSISTOR DTA144EU
Q502	8-729-905-35	TRANSISTOR 2SC4081R
Q581	8-729-905-23	TRANSISTOR 2SA1576R
Q582	8-729-820-76	TRANSISTOR 2SA1179-M5M6

RP-105 (REC/PB AMP) PRINTED WIRING BOARD
— Ref. No, RP-105 BOARD : 1000 series —

RP-105 BOARD (CONDUCTOR SIDE)



04

RP-105 (REC/PB AMP) PRINTED WIRING BOARD
— Ref. No, RP-105 BOARD : 1000 series —

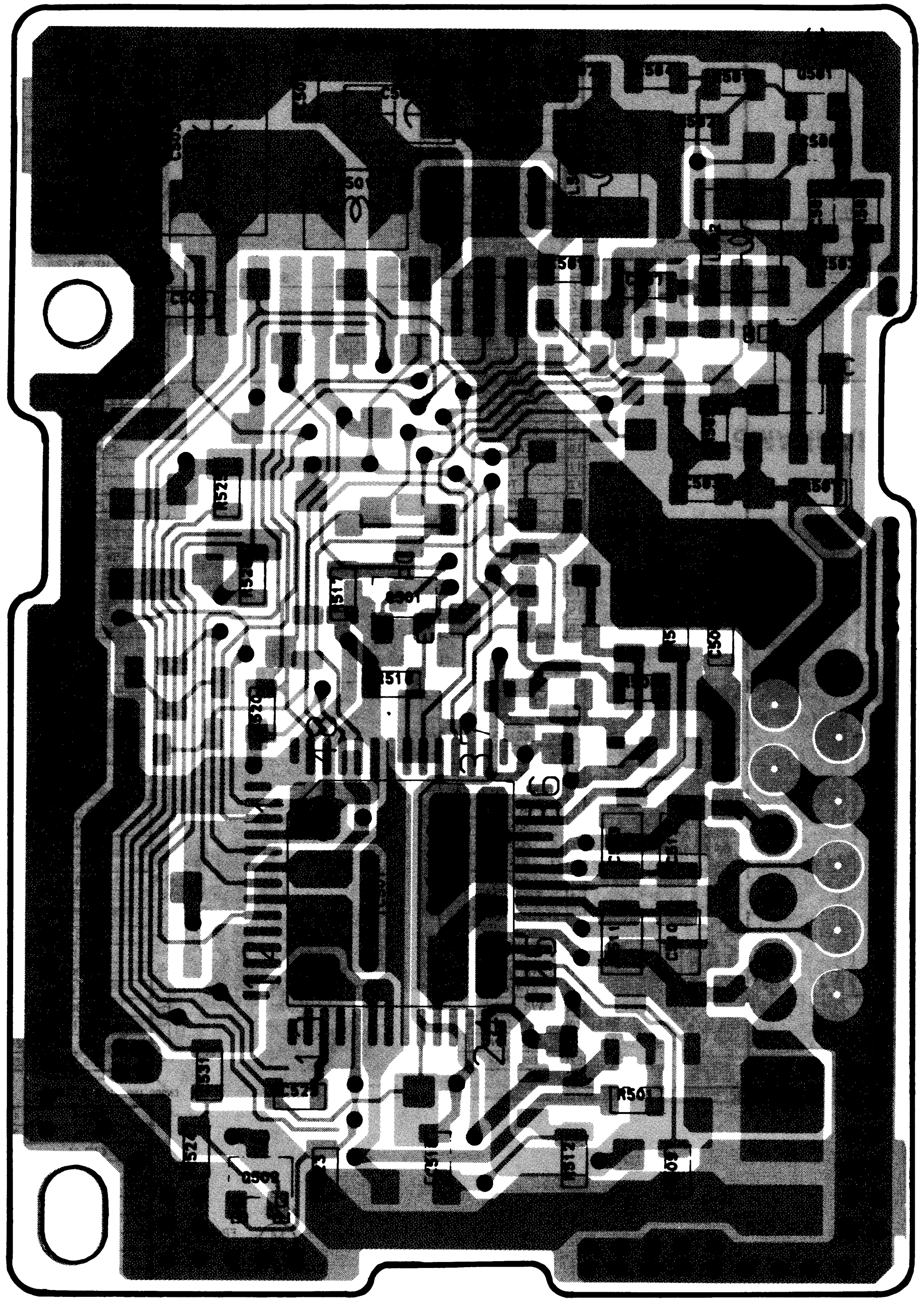
IC

IC501	8-752-033-38	IC CXA1202R

TRANSISTOR

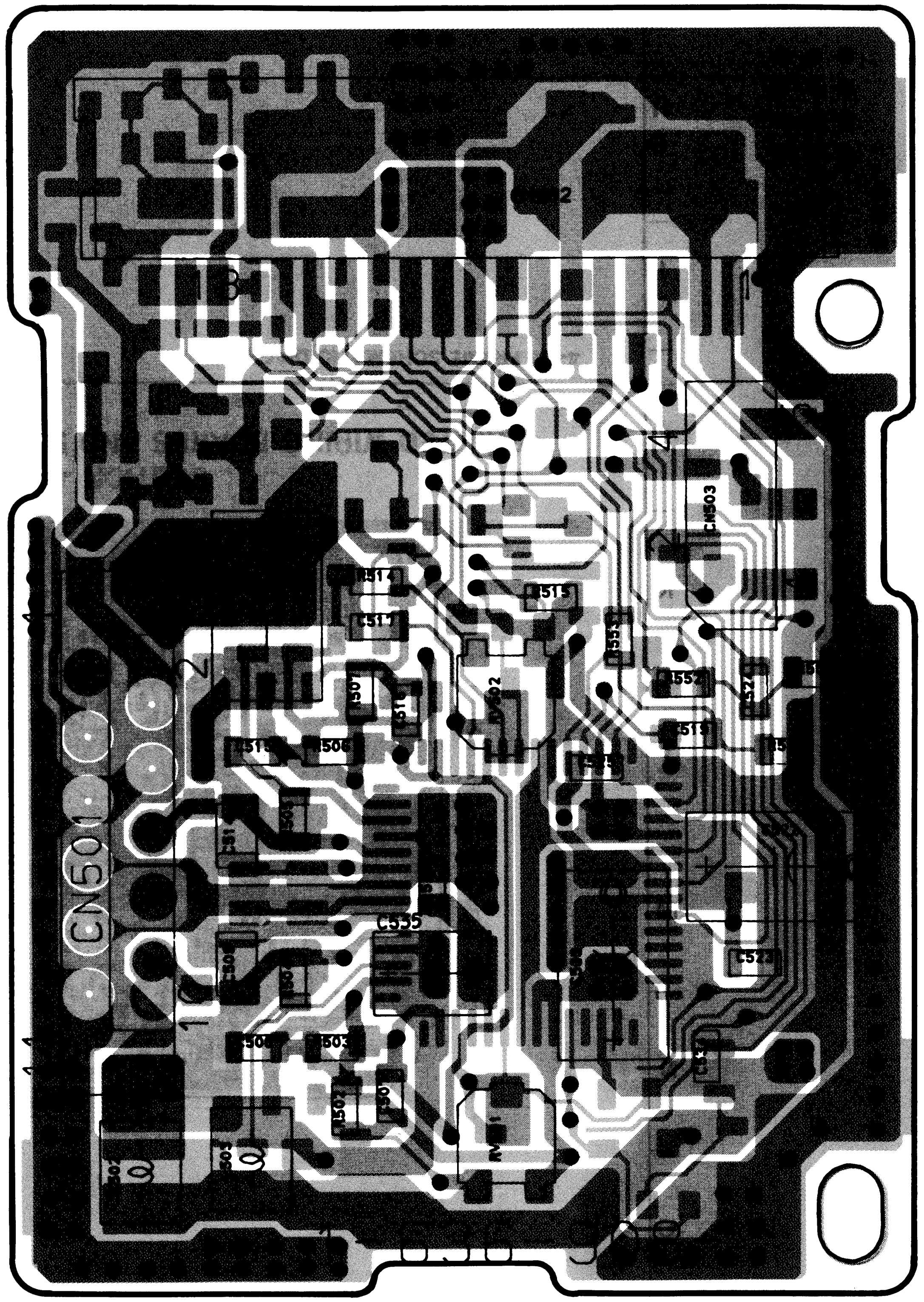
Q501	8-729-905-12	TRANSISTOR DTA144EU
Q502	8-729-905-35	TRANSISTOR 2SC4081R
Q581	8-729-905-23	TRANSISTOR 2SA1576R
Q582	8-729-820-76	TRANSISTOR 2SA1179-M5M6

RP-105 BOARD (CONDUCTOR SIDE)



04

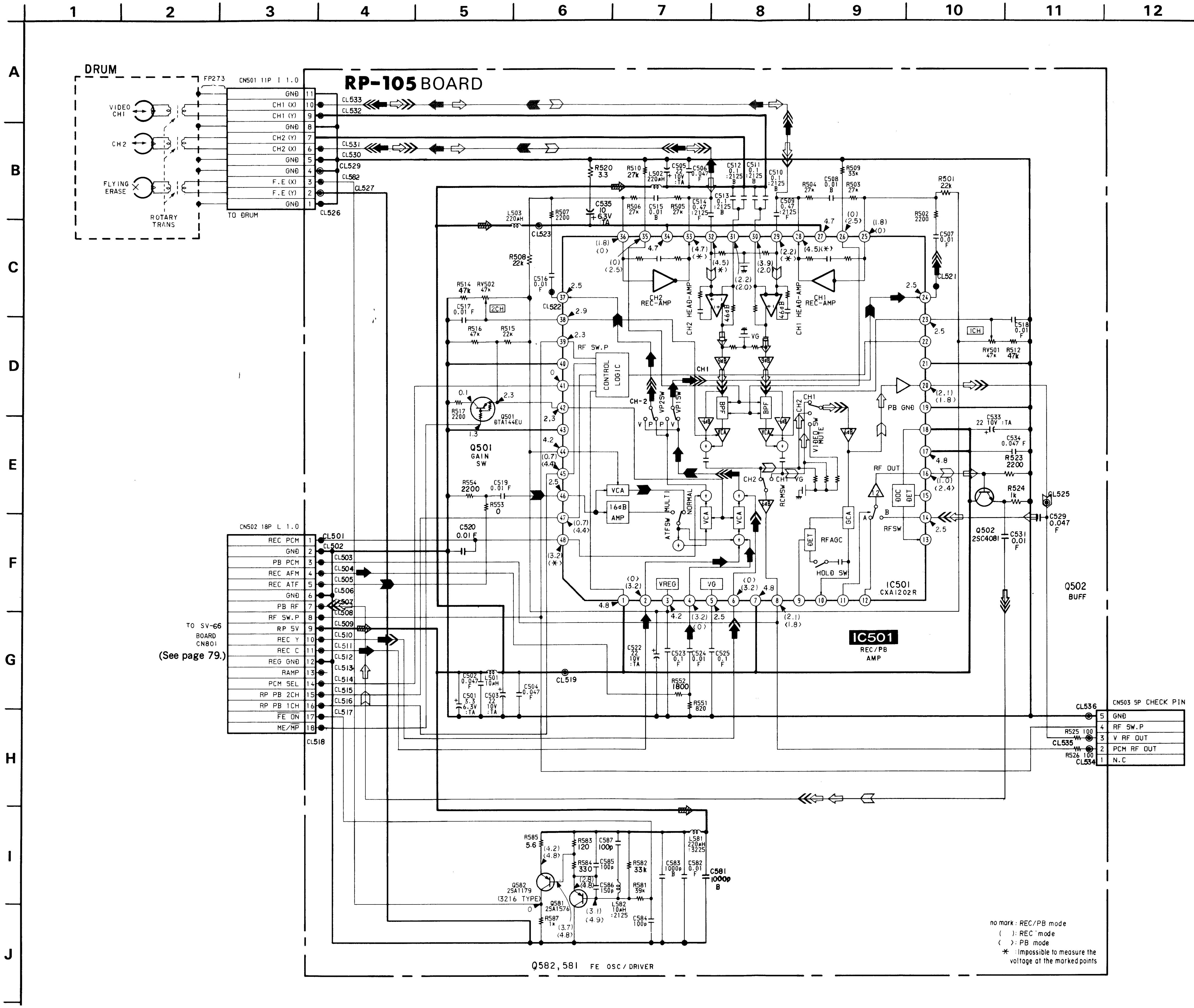
RP-105 BOARD (COMPONENT SIDE)



11

RP-105 (REC/PB AMP) SCHEMATIC DIAGRAM

— Ref. No, RP-105 BOARD : 1000 series —

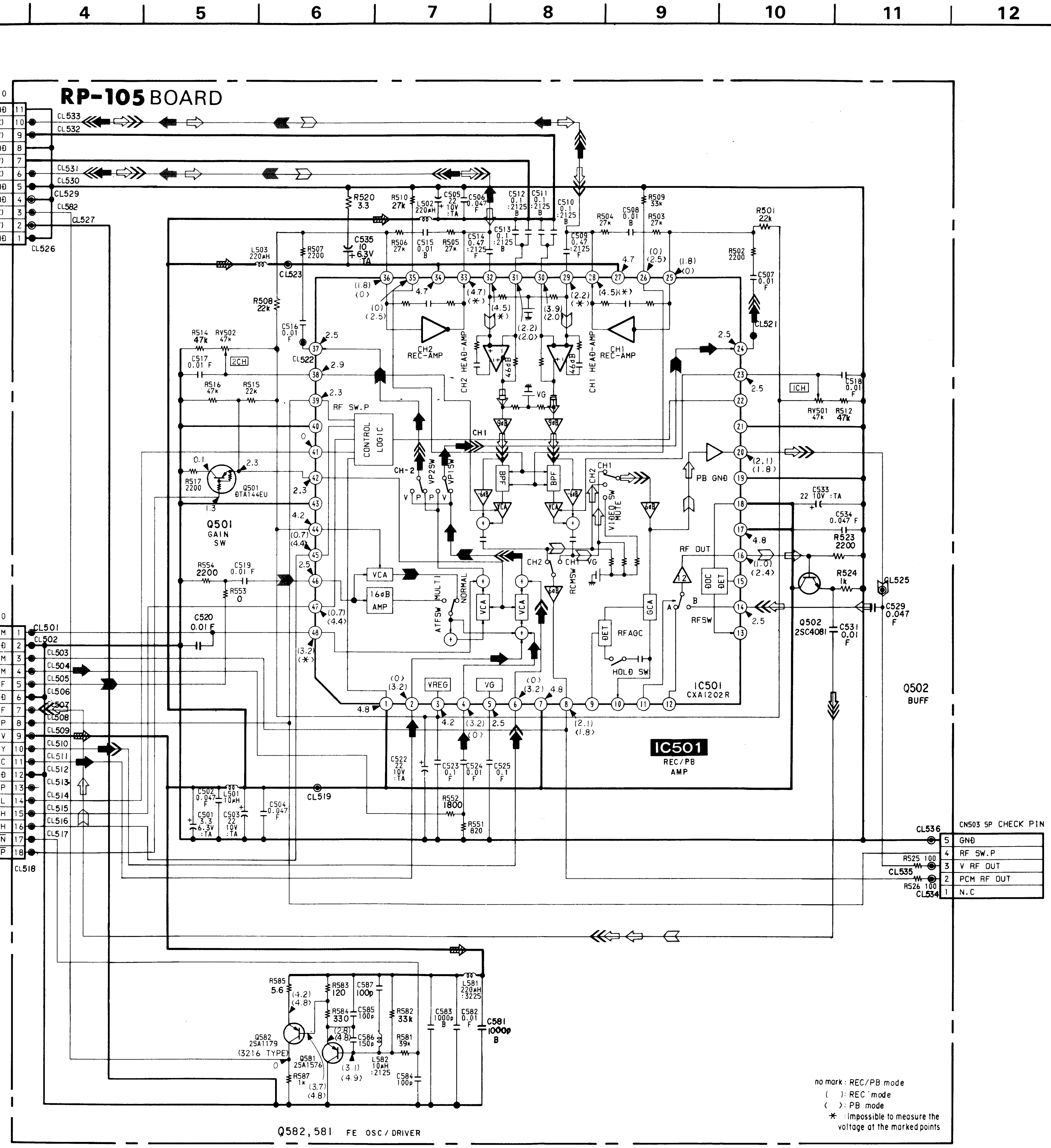

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
A B C D E F G H I J
DRUM
VIDEO CH1
CH2
FLYING ERASE
ROTARY TRANS
FP273
CN501 11P I 1.0
GND
CH1 (X)
CH1 (Y)
GND
CH2 (Y)
CH2 (X)
GND
GND
F.E (X)
F.E (Y)
GND
TO DRUM
RP-105 BOARD
CL533
CL532
CL531
CL530
CL529
CL582
CL527
CL526
IC501
REC/PB AMP
CXA1202R
CH2 REC-AMP
CH1 REC-AMP
CH2 HEAD-AMP
CH1 HEAD-AMP
CONTROL LOGIC
RF SW.P
Q501 GAIN SW
Q501 DTA144EU
VCA
16dB AMP
ATFSW
MULTI
NORMAL
VREG
VG
BPF
VIDEO MUTE
RF OUT
RF AGC
HOLD SW
RFSW
DOC DET
DET
GCA
PB GND
Q502 2SC4081
Q502 BUFF
CL525
CN502 18P L 1.0
REC PCM
GND
PB PCM
REC AFM
REC ATF
GND
PB RF
RF SW.P
RP 5V
REC Y
REC C
REG GND
RAMP
PCM SEL
RP PB 2CH
RP PB 1CH
FE ON
ME/MP
CL501
CL502
CL503
CL504
CL505
CL506
CL507
CL508
CL509
CL510
CL511
CL512
CL513
CL514
CL515
CL516
CL517
CL518
CL519
TO SV-66 BOARD CN801
(See page 79.)
CN503 5P CHECK PIN
GND
RF SW.P
V RF OUT
PCM RF OUT
N.C
CL536
CL535
CL534
R525 100
R526 100
Q582 2SA1179 (3216 TYPE)
Q581 2SA1576
Q582,581 FE OSC/DRIVER
no mark : REC/PB mode
( ) : REC mode
( ) : PB mode
✱ : Impossible to measure the voltage at the marked points

• **Signal path**

	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC	➡	➡	➡	➡
PB			⇨	⇨

• **Signal path**

	REC	REC/PB	PB
Ref.signal	➡		▷


4
5
6
7
8
9
10
11
12
13
14
15
RP-105 BOARD
IC501
REC/PB AMP
IC501 CXA1202R
Q501 GAIN SW
Q501 BTA144EU
Q502 2SC4081
Q502 BUFF
Q582 2SA1179 (3216 TYPE)
Q581 2SA1576
Q582, 581 FE OSC/DRIVER
CH2 REC-AMP
CH1 REC-AMP
CH2 HEAD-AMP
CH1 HEAD-AMP
CONTROL LOGIC
RF SW.P
PB GND
RF OUT
RFSW
RFAGC
HOLD SW
DOC DET
GCA
VCA
16dB AMP
ATFSW
MULTI
NORMAL
VIDEO MUTE
RCMSW
VREG
VG
BPF
VP1SW
VP2SW
CN503 5P CHECK PIN
5 GND
4 RF SW.P
3 V RF OUT
2 PCM RF OUT
1 N.C
CL536
CL535
CL534
R525 100
R526 100
CL525
CL519
CL521
CL522
CL523
CL526
CL527
2CH
1CH

no mark : REC/PB mode
( ) : REC mode
⟨ ⟩ : PB mode
✳ : Impossible to measure the voltage at the marked points

• Signal path

	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC	➡	➡	➡≫	➡
PB			⇨≫	⇨

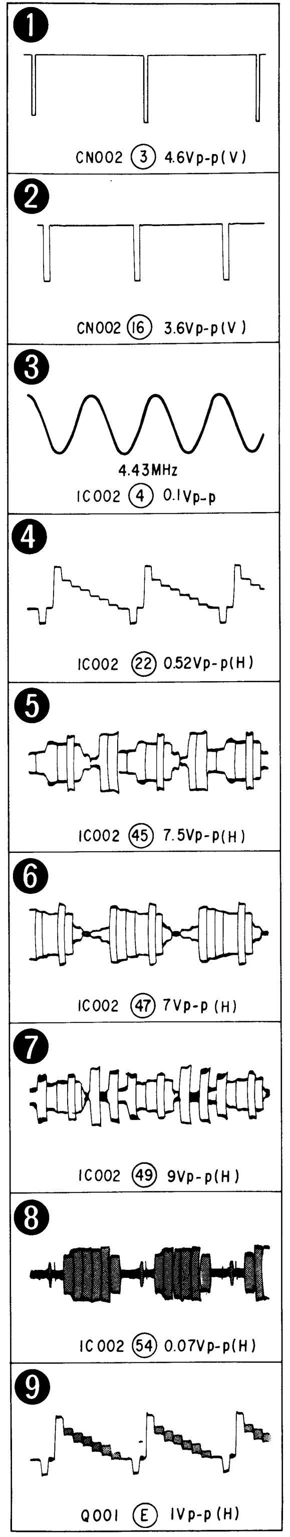
• Signal path

	REC	REC/PB	PB
Ref.signal	➤		▷

RG-22 (LCD VIDEO (R. G. B.)) SCHEMATIC DIAGRAM

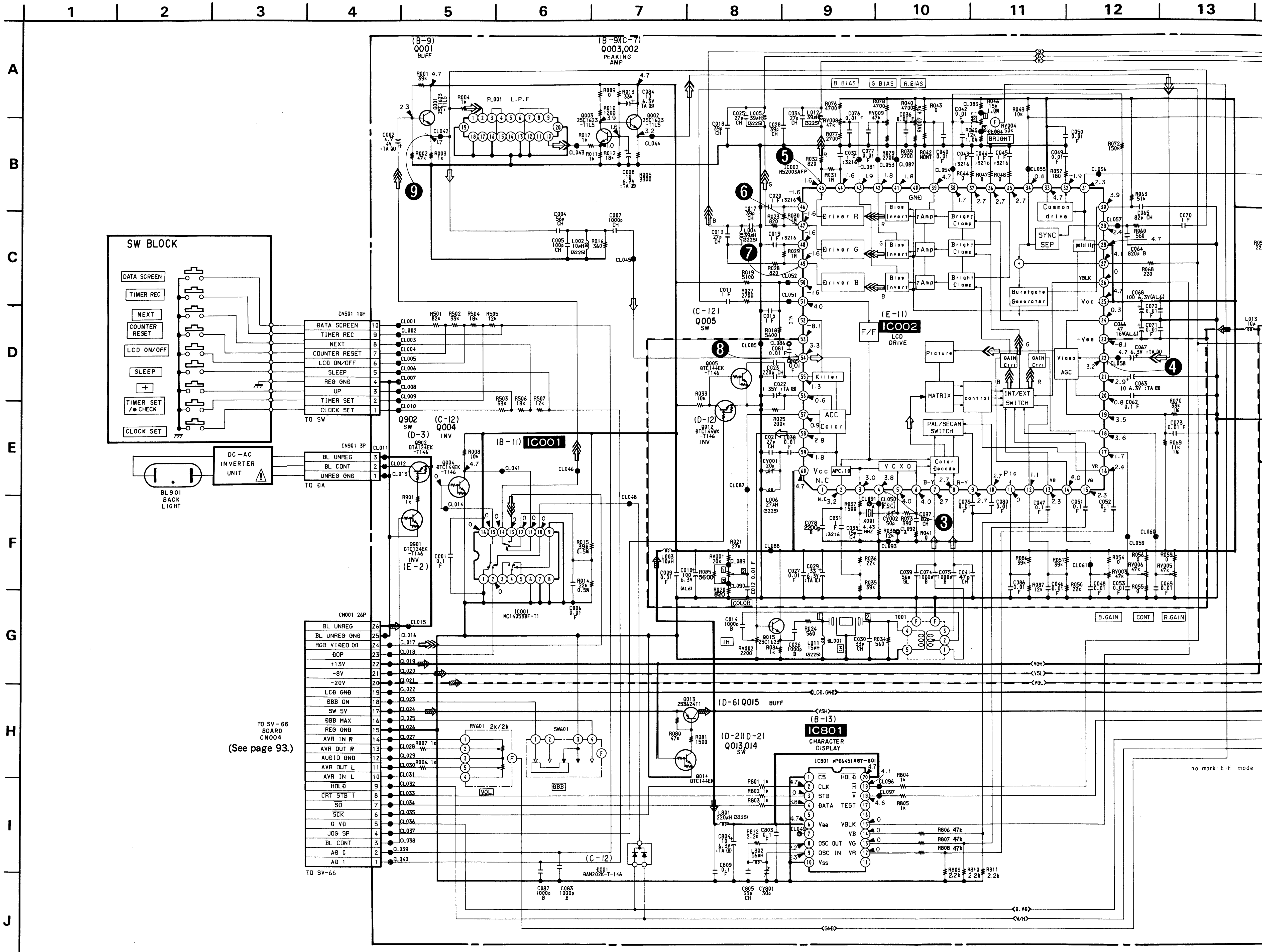
— Ref. No, RG-22 BOARD : 2000 series —

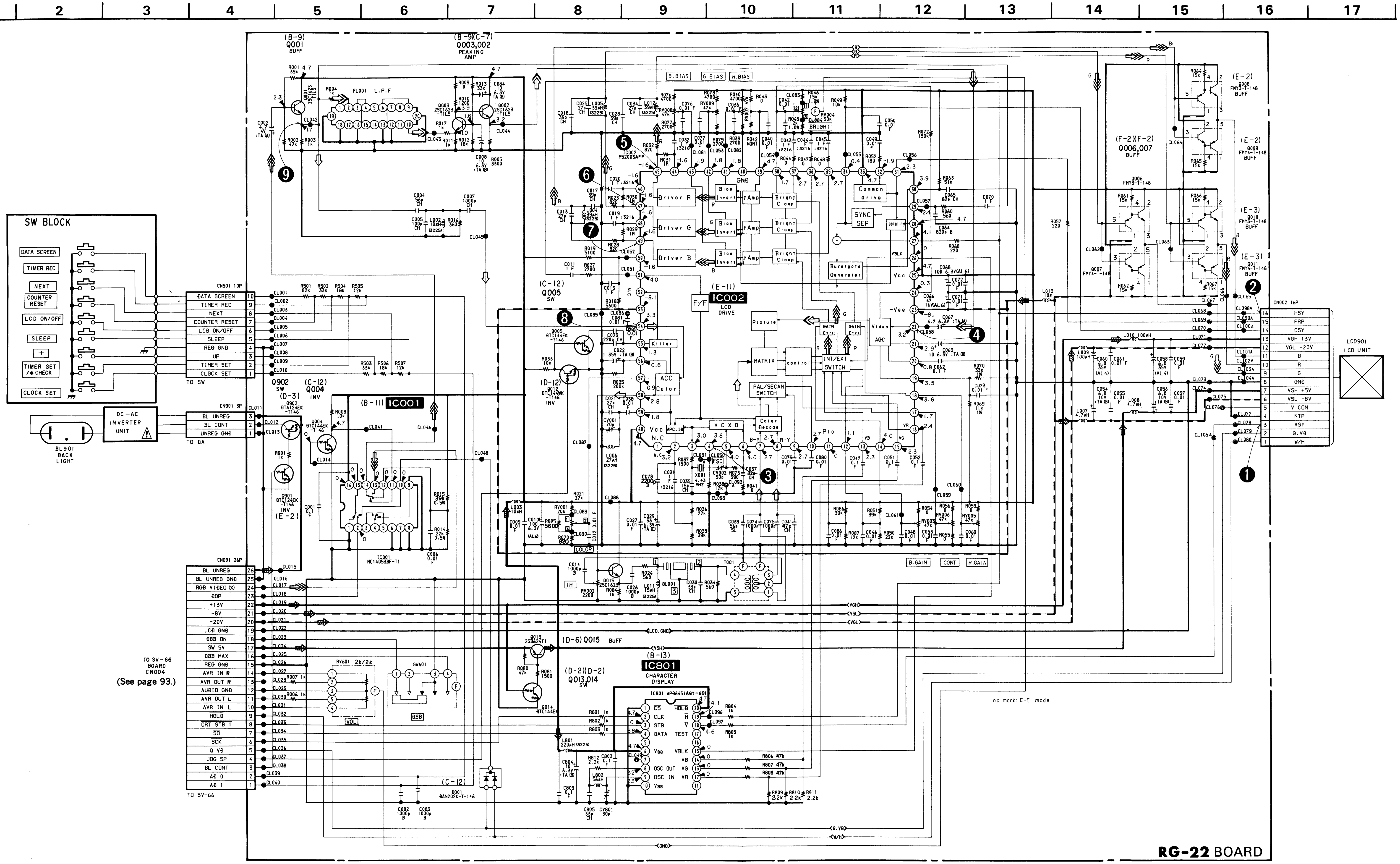
RG-22 BOARD (E-E mode)



- Signal path

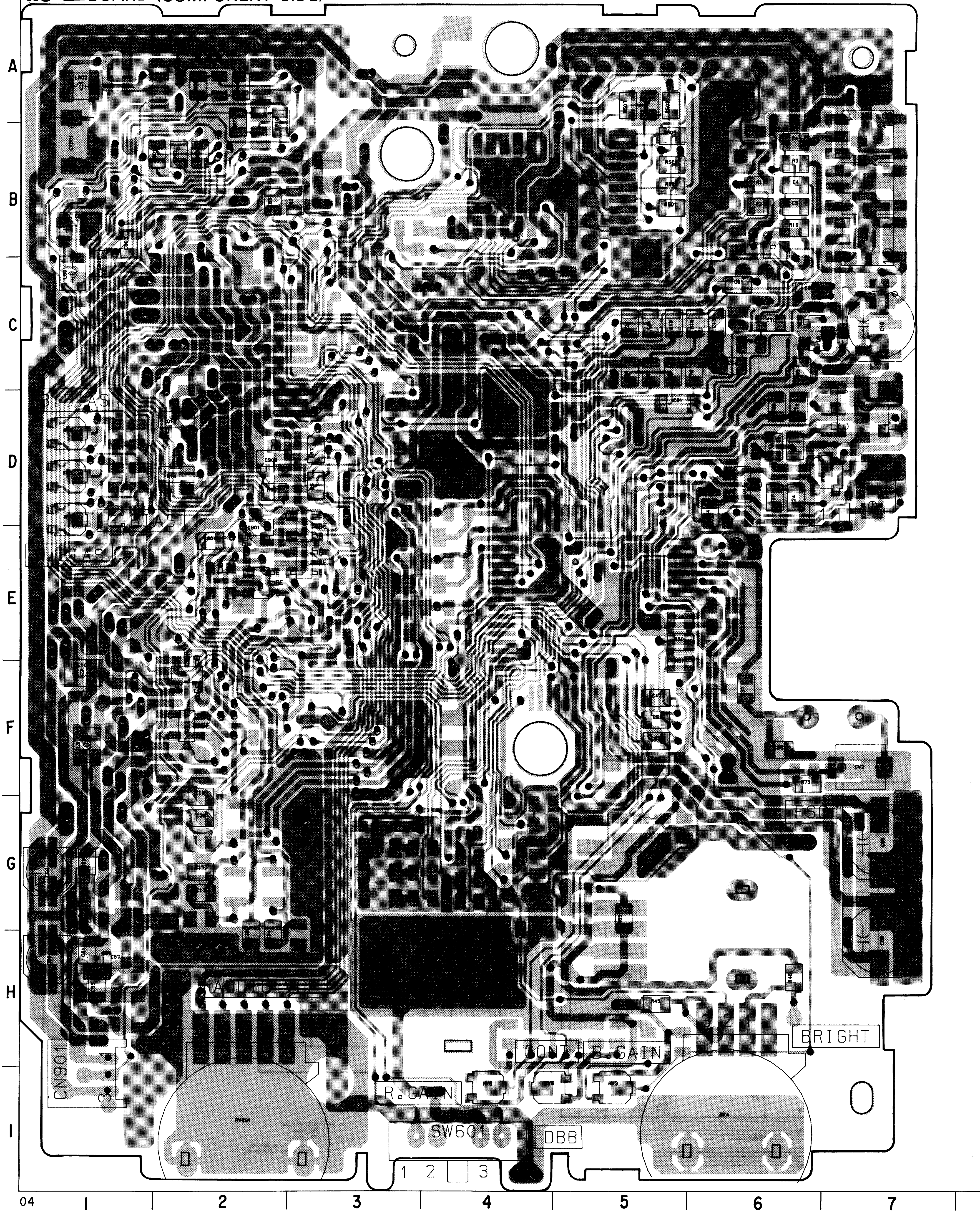
	VIDEO Signal		
	CHROMA	Y	Y/CHROMA
PB	⇨	⇨⇨	⇨⇨⇨


1
2
3
4
5
6
7
8
9
10
11
12
13
A
B
C
D
E
F
G
H
I
J
(B-9) Q001 BUFF
(B-9)(C-7) Q003,002 PEAKING AMP
FL001 L.P.F
SW BLOCK
DATA SCREEN
TIMER REC
NEXT
COUNTER RESET
LCD ON/OFF
SLEEP
+
TIMER SET /● CHECK
CLOCK SET
CN501 10P
DATA SCREEN
TIMER REC
NEXT
COUNTER RESET
LCD ON/OFF
SLEEP
REG GND
UP
TIMER SET
CLOCK SET
TO SW
DC-AC INVERTER UNIT
BL901 BACK LIGHT
CN901 3P
BL UNREG
BL CONT
UNREG GND
TO BA
Q902 SW (D-3)
(C-12) Q004 INV
(B-11) IC001
IC001 MC14053BF-T1
Q901 INV (E-2)
CN001 26P
BL UNREG
BL UNREG GND
RGB VIDEO OO
BOP
+13V
-8V
-20V
LCD GND
BBB ON
SW 5V
BBB MAX
REG GND
AVR IN R
AVR OUT R
AUDIO GND
AVR OUT L
AVR IN L
HOLD
CRT STB 1
SO
SCK
Q VD
JOG SP
BL CONT
AD 0
AD 1
TO SV-66
TO SV-66 BOARD CN004 (See page 93.)
RV601 2k/2k
VOL
SW601
BBB
(C-12) Q005 SW
(D-12) Q012 INV
(E-11) IC002 LCD DRIVE
IC002 M52003AFP
B.BIAS
G.BIAS
R.BIAS
Driver R
Driver G
Driver B
Bias Invert
Bright Clamp
Common drive
SYNC SEP
polarity
Burstgate Generator
Video AGC
GAIN Ctrl
INT/EXT SWITCH
MATRIX
control
Picture
PAL/SECAM SWITCH
Color Decode
VCXO
APC.ID
Killer
ACC
Color
F/F
BRIGHT
COLOR
B.GAIN
CONT
R.GAIN
(D-6) Q015 BUFF
T001
(B-13) IC801 CHARACTER DISPLAY
IC801 μPD6451AGT-601
CS
CLK
STB
DATA
Vdd
OSC OUT
OSC IN
Vss
HOLD
TEST
VBLK
VB
VG
VR
(D-2)(D-2) Q013,014 SW
(C-12) D001 DA202K-T-146
VGH
VSL
VGL
LCD GND
VSH
Q.VD
W/H
GND
no mark: E-E mode

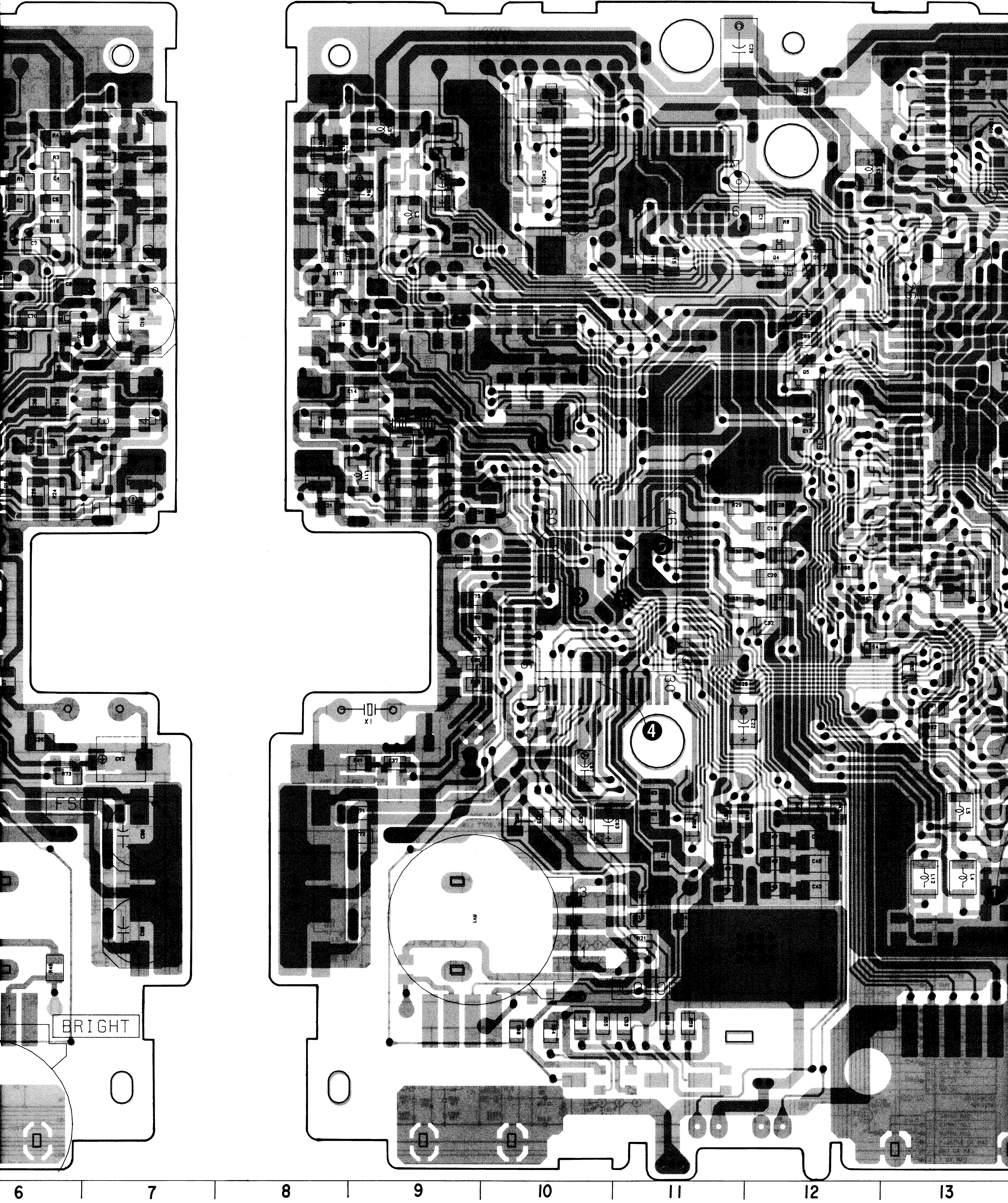

2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
SW BLOCK
DATA SCREEN
TIMER REC
NEXT
COUNTER RESET
LCD ON/OFF
SLEEP
+
TIMER SET / CHECK
CLOCK SET
CN501 10P
TO SW
DC-AC INVERTER UNIT
BL901 BACK LIGHT
CN901 3P
BL UNREG
BL CONT
UNREG GND
TO 8A
(B-9) Q001 BUFF
(B-9)(C-7) Q003,002 PEAKING AMP
FL001 L.P.F
Q902 SW (D-3)
(C-12) Q004 INV
Q901 INV (E-2)
(B-11) IC001
IC001 MC14053BF-T1
(C-12) Q005 SW
(D-12) Q012 INV
(E-11) IC002 LCD DRIVE
IC002 M52005AFP
B.BIAS
G.BIAS
R.BIAS
BRIGHT
Driver R
Driver G
Driver B
Bias Invert
Amp
Bright Clamp
Common drive
SYNC SEP
polarity
Burstgate Generator
Video AGC
Picture
GAIN Ctrl
INT/EXT SWITCH
MATRIX
control
PAL/SECAM SWITCH
Color Decode
VCXO
APC
ACC Color
Killer
F/F
COLOR
B.GAIN
CONT
R.GAIN
(F-2)(F-2) Q006,007 BUFF
(E-2) Q008 BUFF
(E-2) Q009 BUFF
(E-3) Q010 BUFF
(E-3) Q011 BUFF
CN002 16P
HSY
FRP
CSY
VGH 13V
VGL -20V
B
R
G
GND
VSH +5V
VSL -8V
V COM
NTP
VSY
Q.VD
W/H
LCD901 LCD UNIT
CN001 26P
BL UNREG
BL UNREG GND
RGB VIDEO OO
DDP
+13V
-8V
-20V
LCD GND
DDB ON
SW 5V
DDB MAX
REG GND
AVR IN R
AVR OUT R
AUDIO GND
AVR OUT L
AVR IN L
HOLD
CRT STB
SO
SCK
Q VD
JOG SP
BL CONT
AD 0
AD 1
TO SV-66
TO SV-66 BOARD CN004 (See page 93.)
RV601 2k/2k
VOL
SW601
DDB
(D-6) Q015 BUFF
(D-2)(D-2) Q013,014 SW
(B-13) IC801 CHARACTER DISPLAY
IC801 #PD6451AGT-601
CS
CLK
STB
DATA
Vdd
OSC OUT
OSC IN
Vss
HOLD
H
V
TEST
VBLK
VB
VG
VR
(C-12)
D001 DAN202K-T-146
no mark: E-E mode
RG-22 BOARD
❶
❷
❸
❹
❺
❻
❼
❽
❾

RG-22 (LCD VIDEO (R. G. B.)) PRINTED WIRING BOARD
— Ref. No, RG-22 BOARD : 2000 series —

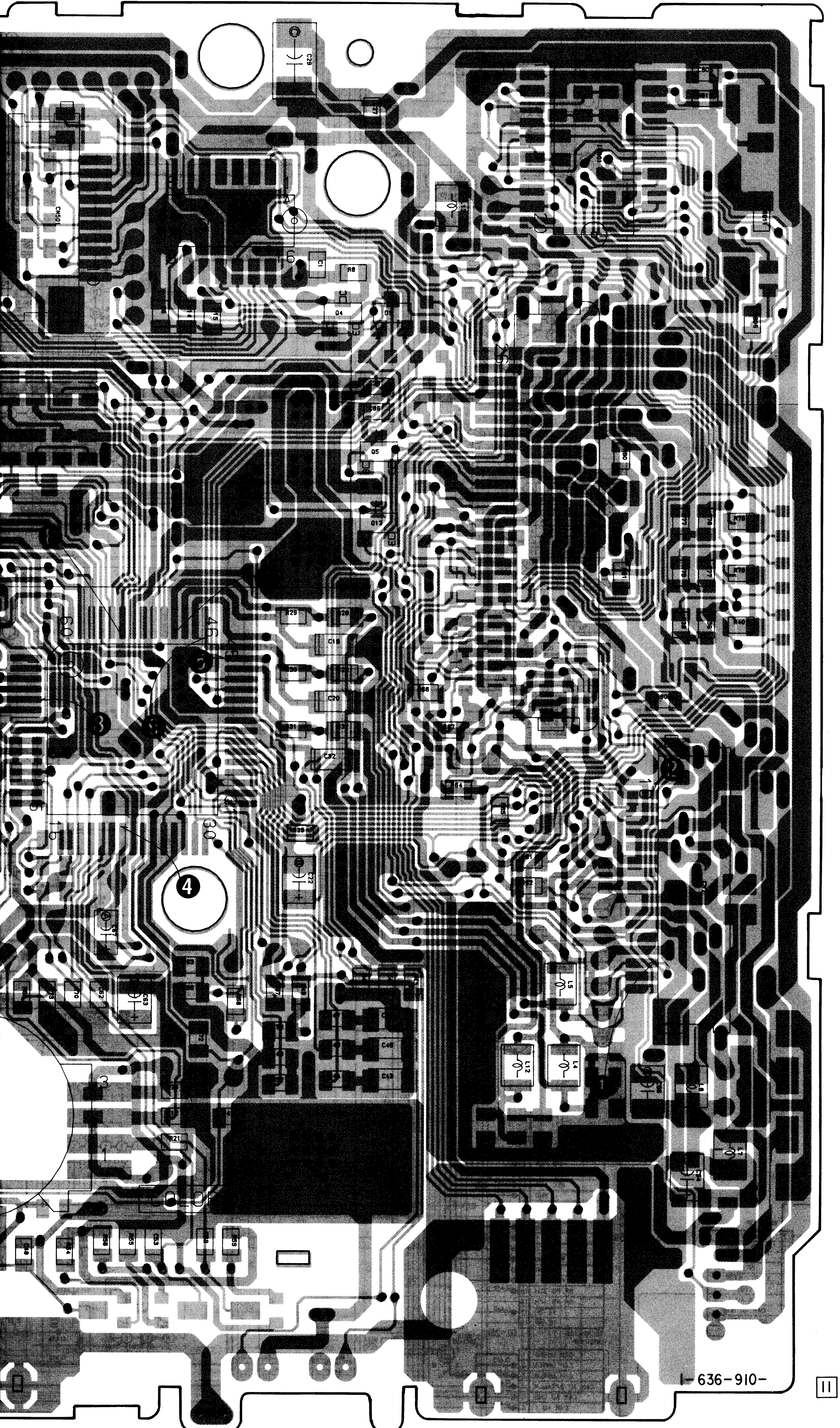
RG-22 BOARD (COMPONENT SIDE)


A
B
C
D
E
F
G
H
I
B.BIAS
G.BIAS
R.BIAS
CN901
FSC
CONT
B.GAIN
BRIGHT
R.GAIN
SW601
DBB
1 2 3
3 2 1
RV601
04
1
2
3
4
5
6
7

RG-22 BOARD(CONDUCTOR SIDE)


CN501
C29
Q4
Q5
C19
C20
C22
X1
CV2
FSC
BRIGHT
RV1
C10
C40
C43
L4
L5
L12
60
46
30
1
15
6
7
8
9
10
11
12
13

CTOR SIDE)

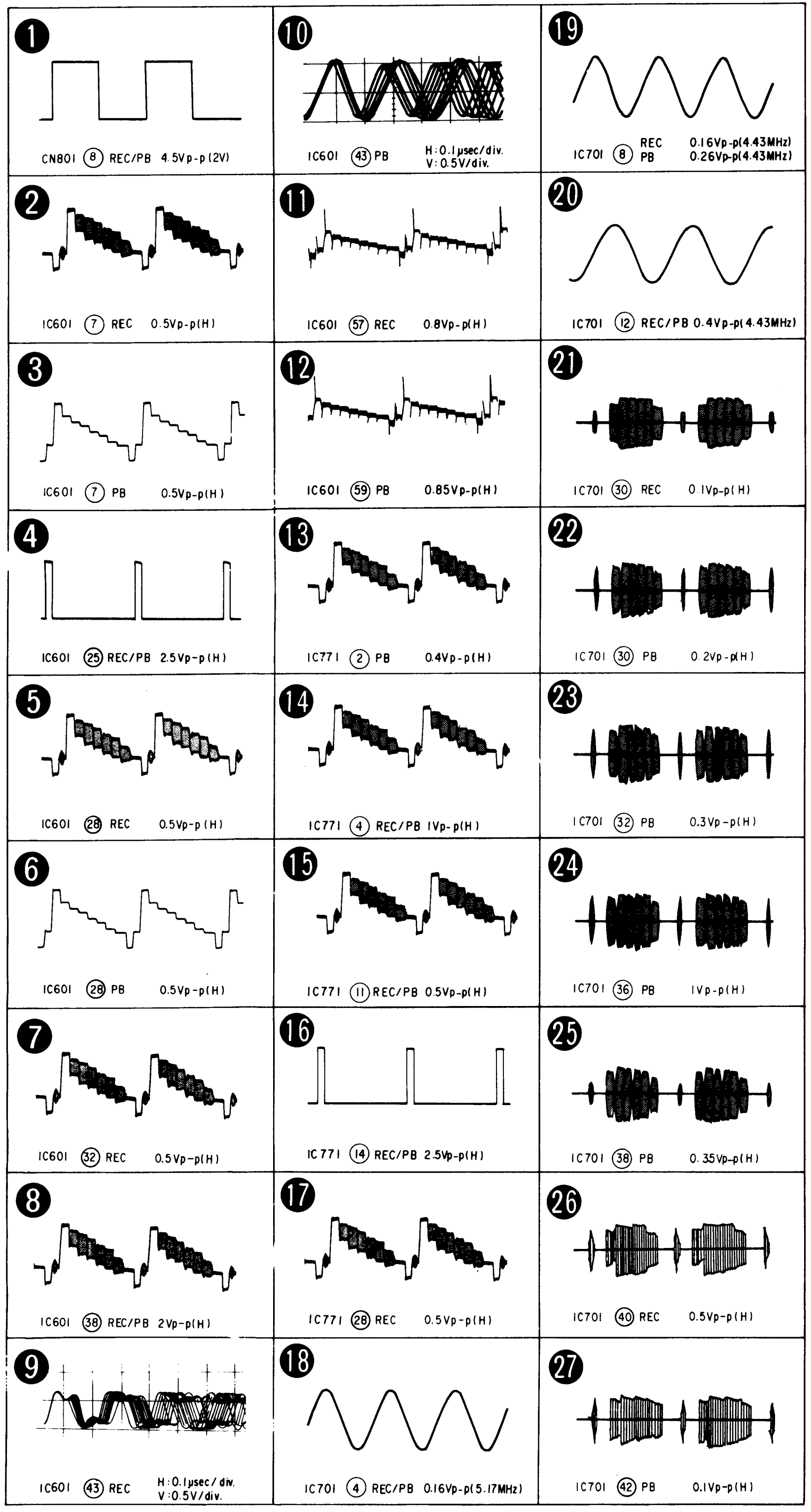


	DIODE	
D001	8-719-914-47	DIODE MA152WK
	IC	
IC001	8-759-009-07	IC MC14053BF
IC002	8-759-635-37	IC M52003AFP
IC801	8-759-150-07	IC UPD6451AGT-601
	TRANSISTOR	
Q001	8-729-100-66	TRANSISTOR 2SC1623
Q002	8-729-100-66	TRANSISTOR 2SC1623
Q003	8-729-100-66	TRANSISTOR 2SC1623
Q004	8-729-901-01	TRANSISTOR DTC144EK
Q005	8-729-901-01	TRANSISTOR DTC144EK
Q006	8-729-904-41	TRANSISTOR FMY3
Q007	8-729-904-44	TRANSISTOR FMY4
Q008	8-729-904-41	TRANSISTOR FMY3
Q009	8-729-904-44	TRANSISTOR FMY4
Q010	8-729-904-41	TRANSISTOR FMY3
Q011	8-729-904-44	TRANSISTOR FMY4
Q012	8-729-901-03	TRANSISTOR DTC144WK
Q013	8-729-141-48	TRANSISTOR 2SB624-BV345
Q014	8-729-901-01	TRANSISTOR DTC144EK
Q015	8-729-100-66	TRANSISTOR 2SC1623
Q901	8-729-901-00	TRANSISTOR DTC124EK
Q902	8-729-901-05	TRANSISTOR DTA124EK

CC-55 (CCD), CN-6P (CAMERA CONNECTOR), SV-66(VIDEO) SCHEMATIC DIAGRAM

— Ref. No, CN-6P BOARD : 3000 series, CC-55 and SV-66 BOARDS : 5000series —

SV-66 BOARD (VIDEO)

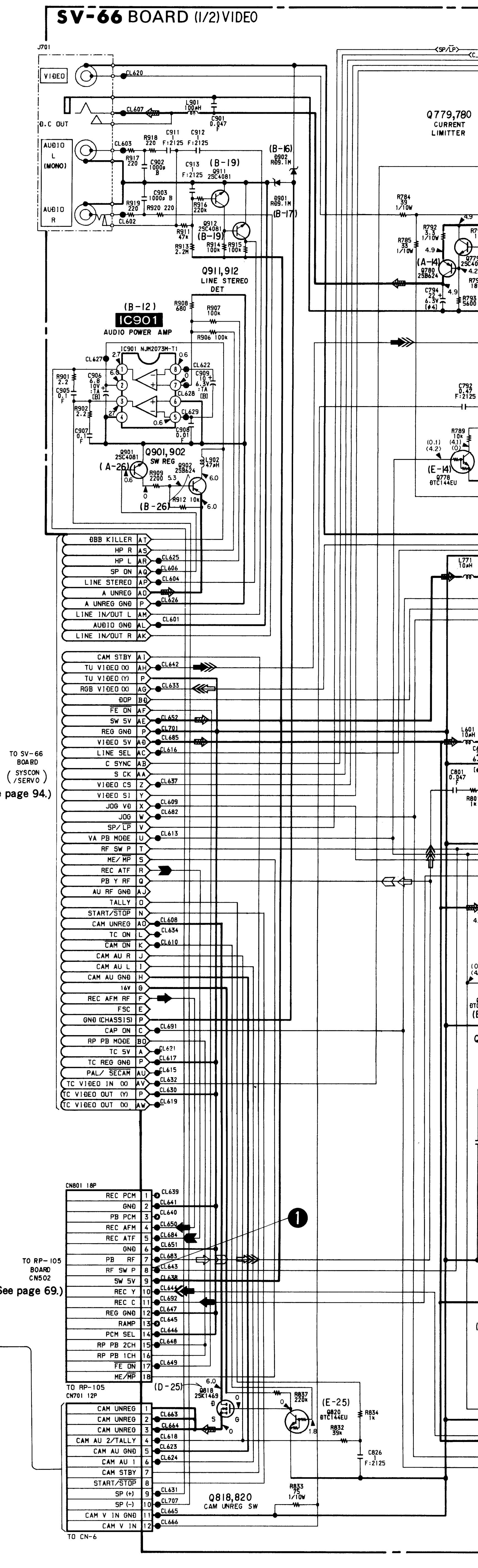


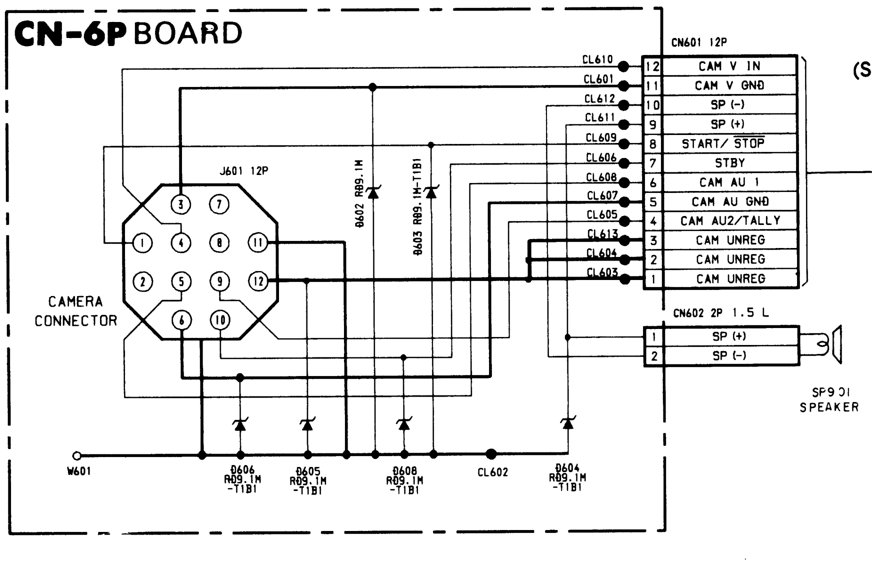
• Signal path

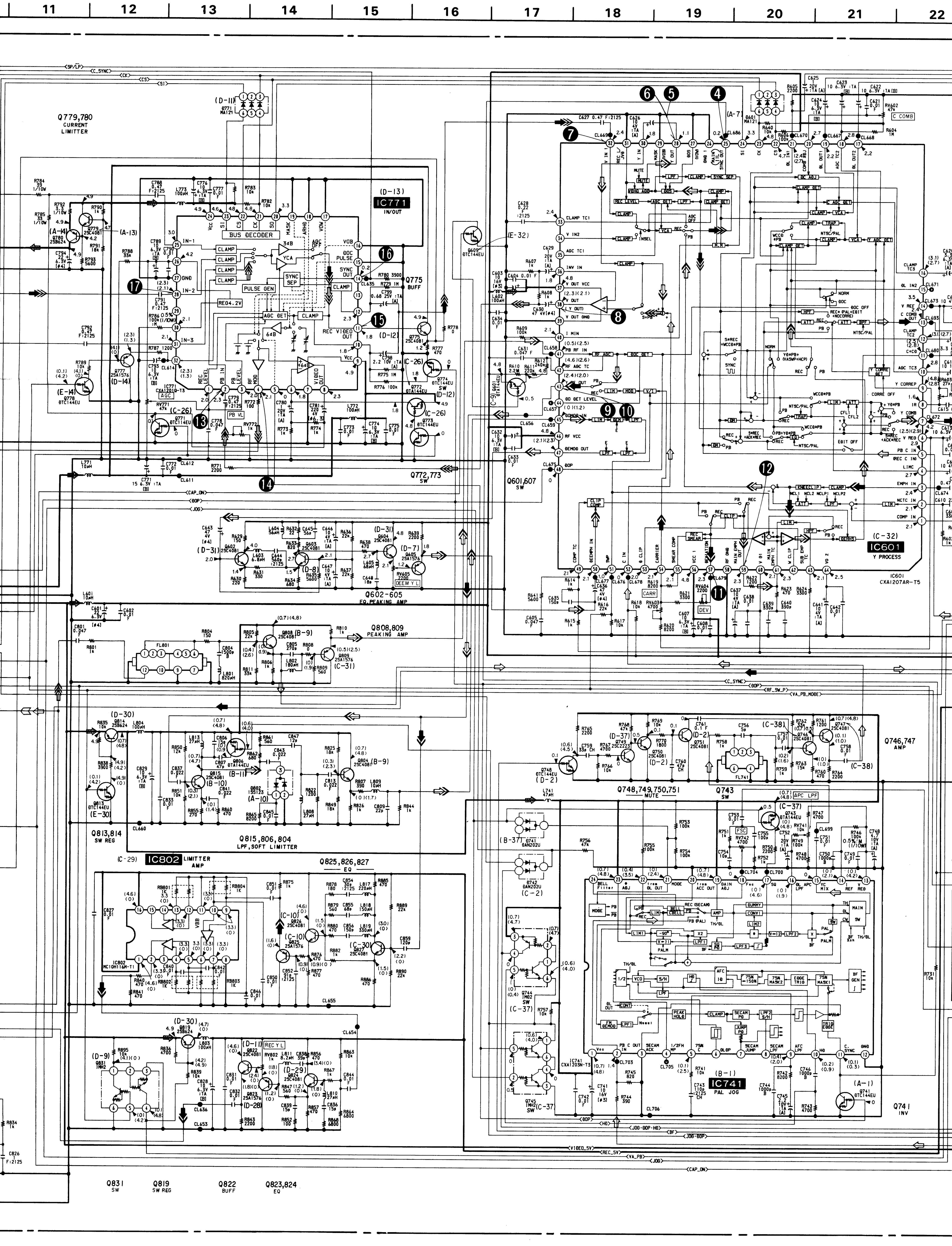
	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC	➡	⇛	⇛≫	➡
PB	⇨	⇨	⇨≫	⇨

• Signal path

	REC	REC/PB	PB
Ref.signal	➤	⊳	▷


SV-66 BOARD (1/2) VIDEO
J701
VIDEO
D.C OUT
AUDIO L (MONO)
AUDIO R
CL620
CL607
L901 100μH
C901 0.047
C911
C912 F:2125
R918 220
CL603
R917 220
C902 1000p B
C913 F:2125
(B-19)
Q911 2SC4081
(B-16)
D902 RD9.1M
C903 1000p B
R919 220
R920 220
R916 220k
D901 RD9.1M
(B-17)
CL602
Q912 2SC4081
(B-19)
R911 47k
R913 2.2M
R914 100k
R915 100k
Q911,912 LINE STEREO DET
R908 680
R907 100k
R906 100k
(B-12)
IC901
AUDIO POWER AMP
IC901 NJM2073M-T1
CL627
CL622
C909 10 6.3V :TA (B)
CL628
CL629
C908 0.01 F
R901 2.2
C906 6.8 10V :TA (B)
C905 0.1 F
R902 2.2
C907 0.1 F
Q901 2SC4081
(A-26)
Q901,902 SW REG
Q902 2SB624
L902 47μH
R909 2200
R912 10k
(B-26)
Q779,780 CURRENT LIMITTER
R784 39 1/10W
R792 3.3 1/10W
R785 33 1/10W
(A-14)
Q780 2SB624
C794 22 6.3V (#4)
R793 5600
C792 0.47 F:2125
R789 10k
(E-14)
Q778 BTC144EU
L771 10μH
L601 10μH
C801 0.047 F
DBB KILLER AT
HP R AS
HP L AR CL625
SP ON AQ CL606
LINE STEREO AP CL604
A UNREG AO
A UNREG GND P CL626
LINE IN/OUT L AM
AUDIO GND AL CL601
LINE IN/OUT R AK
CAM STBY AI
TU VIDEO (X) AH CL642
TU VIDEO (Y) P
RGB VIDEO (X) AG CL633
DOP BD
FE ON AF
SW 5V AE CL652
REG GND P CL701
VIDEO 5V AD CL685
LINE SEL AC CL616
C SYNC AB
S CK AA
VIDEO CS Z CL637
VIDEO SI Y
JOG VD X CL609
JOG W CL682
SP/LP V
VA PB MODE U CL613
RF SW P T
ME/MP S
REC ATF R
PB Y RF Q
AU RF GND AJ
TALLY O
START/STOP N
CAM UNREG AO CL608
TC ON L CL634
CAM ON K CL610
CAM AU R J
CAM AU L I
CAM AU GND H
16V G
REC AFM RF F
FSC E
GND (CHASSIS) P
CAP ON C CL691
RP PB MODE BO
TC 5V A CL621
TC REG GND P CL617
PAL/ SECAM AU CL615
TC VIDEO IN (X) AV CL632
TC VIDEO OUT (Y) P CL630
TC VIDEO OUT (X) AW CL619
TO SV-66 BOARD (SYSCON /SERVO)
(See page 94.)
CN801 18P
REC PCM 1 CL639
GND 2 CL641
PB PCM 3 CL640
REC AFM 4 CL650
REC ATF 5 CL684
GND 6 CL651
PB RF 7 CL683
RF SW P 8 CL643
SW 5V 9 CL638
REC Y 10 CL644
REC C 11 CL692
REG GND 12 CL647
RAMP 13 CL645
PCM SEL 14 CL646
RP PB 2CH 15 CL648
RP PB 1CH 16
FE ON 17 CL649
ME/MP 18
TO RP-105 BOARD CN502
(See page 69.)
TO RP-105 CN701 12P
CAM UNREG 1
CAM UNREG 2 CL663
CAM UNREG 3 CL664
CAM AU 2/TALLY 4 CL618
CAM AU GND 5 CL623
CAM AU 1 6 CL624
CAM STBY 7
START/STOP 8
SP (+) 9 CL631
SP (–) 10 CL707
CAM V IN GND 11 CL665
CAM V IN 12 CL666
TO CN-6
(D-25)
Q818 2SK1469
R837 220k
(E-25)
Q820 BTC144EU
R834 1k
R832 39k
C826 1 F:2125
R833 75 1/10W
Q818,820 CAM UNREG SW
❶


CN-6P BOARD
J601 12P
CAMERA CONNECTOR
D602 RD9.1M
D603 RD9.1M-T1B1
CN601 12P
CL610 12 CAM V IN
CL601 11 CAM V GND
CL612 10 SP (–)
CL611 9 SP (+)
CL609 8 START/ STOP
CL606 7 STBY
CL608 6 CAM AU 1
CL607 5 CAM AU GND
CL605 4 CAM AU2/TALLY
CL613 3 CAM UNREG
CL604 2 CAM UNREG
CL603 1 CAM UNREG
CN602 2P 1.5 L
1 SP (+)
2 SP (–)
SP901 SPEAKER
W601
D606 RD5.1M -T1B1
D605 RD5.1M -T1B1
D608 RD5.1M -T1B1
CL602
D604 RD9.1M -T1B1


11
12
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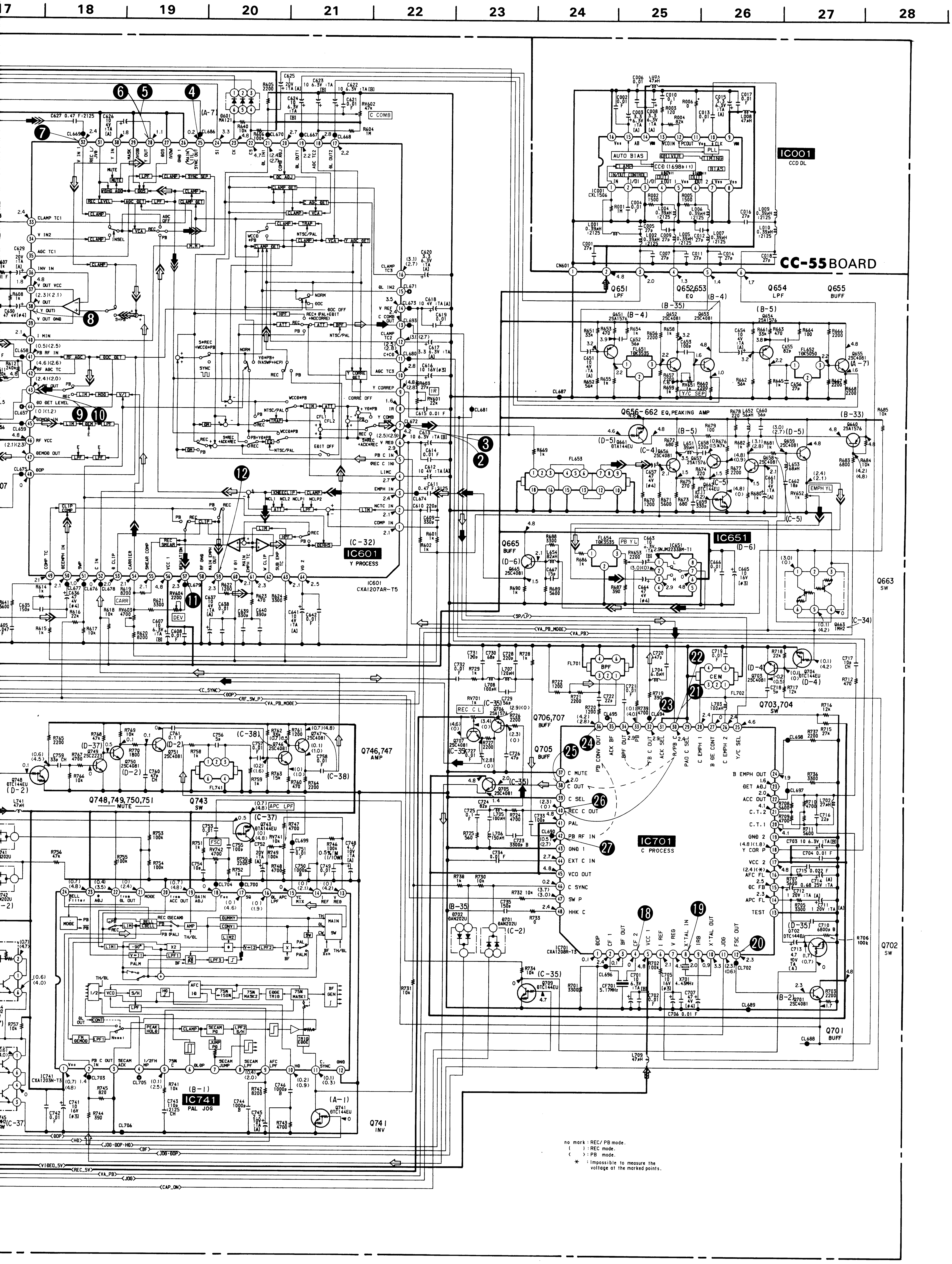
22
Q779,780 CURRENT LIMITTER
(D-13) IC771 IN/OUT
BUS DECODER
CXA1201Q-T3
AGC
Q775 BUFF
Q772,773 SW
Q601,607 SW
Q602-605 EQ,PEAKING AMP
Q808,809 PEAKING AMP
Q813,814 SW REG
Q815,806,804 LPF,SOFT LIMITTER
IC802 LIMITTER AMP
MC10H116M-T1
Q825,826,827 EQ
Q831 SW
Q819 SW REG
Q822 BUFF
Q823,824 EQ
(C-32) IC601 Y PROCESS
IC601 CXA1207AR-T5
Q746,747 AMP
Q748,749,750,751 MUTE
Q743 SW
IC741 PAL JOG
CXA1203N-T3
Q741 INV
C COMB


17
18
19
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22
23
24
25
26
27
28
IC001
CCD DL
CC-55 BOARD
Q651
LPF
Q652,653
EQ
Q654
LPF
Q655
BUFF
Q656-662 EQ,PEAKING AMP
IC651
Q663
SW
Q665
BUFF
IC601
Y PROCESS
IC601
CXA1207AR-T5
Q746,747
AMP
Q748,749,750,751
MUTE
Q743
SW
Q706,707
BUFF
Q705
BUFF
Q703,704
SW
IC701
C PROCESS
IC701
CXA1208R-T3
Q702
SW
Q701
BUFF
IC741
PAL JOG
IC741
CXA1203N-T3
Q741
INV

no mark : REC/ PB mode.
( ) : REC mode.
< > : PB mode.
* : Impossible to measure the voltage at the marked points.

DIODE

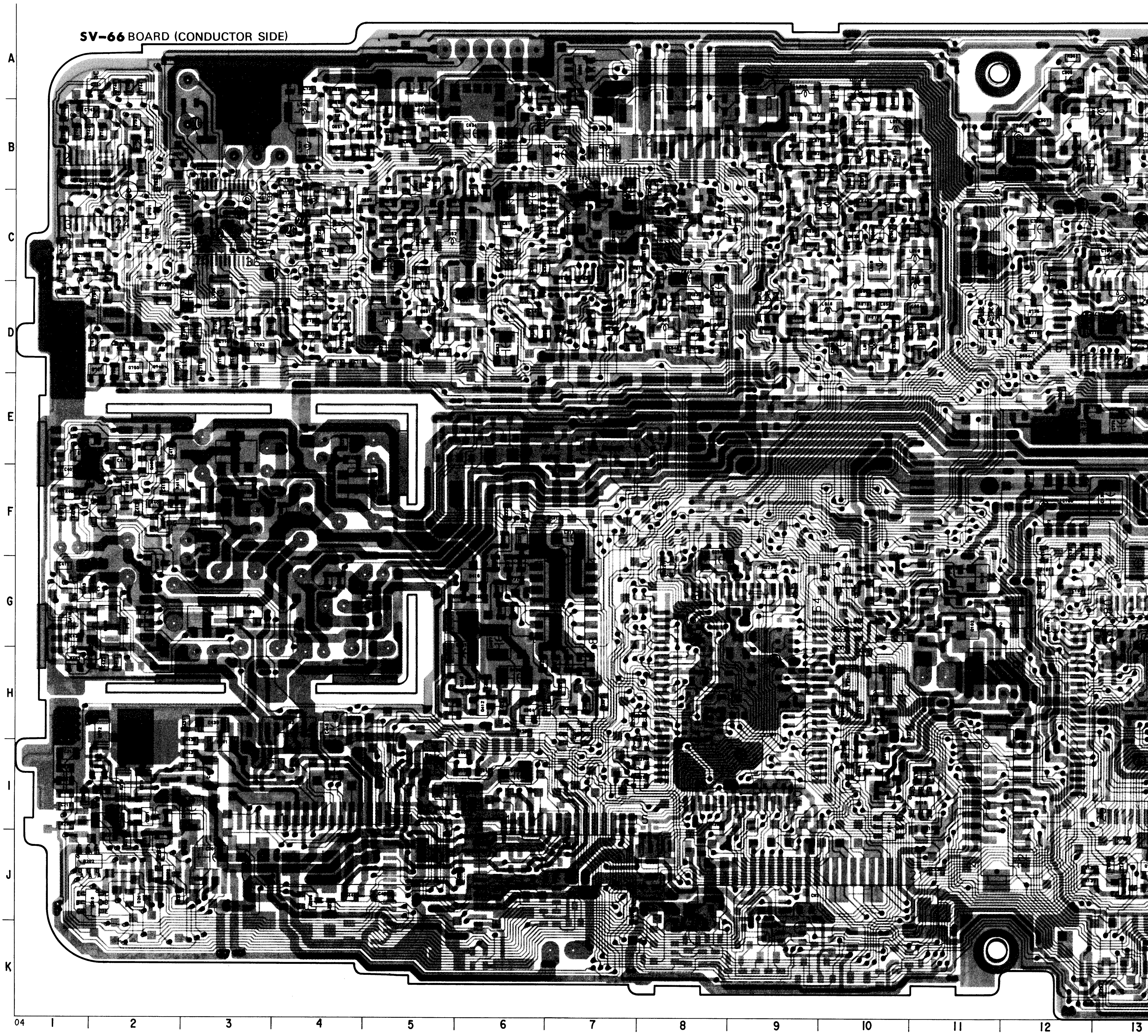
D101	8-719-938-72	DIODE SB01-05CP
D103	8-719-105-52	DIODE RD3.6M-B2
D104	8-719-105-XX	DIODE RD6.2M-B1
D107	8-719-941-09	DIODE DAP202U
D108	8-719-404-40	DIODE MA121
D201	8-719-941-86	DIODE DAN202U
D202	8-719-404-40	DIODE MA121
D203	8-719-404-40	DIODE MA121
D204	8-719-941-09	DIODE DAP202U
D205	8-719-941-09	DIODE DAP202U
D206	8-719-941-09	DIODE DAP202U
D301	8-719-941-86	DIODE DAN202U
D401	8-719-938-78	DIODE SB10-05PCP
D402	8-719-941-09	DIODE DAP202U
D403	8-719-938-75	DIODE SB05-05CP
D404	8-719-938-75	DIODE SB05-05CP
D601	8-719-404-40	DIODE MA121
D701	8-719-941-86	DIODE DAN202U
D702	8-719-941-86	DIODE DAN202U
D741	8-719-941-86	DIODE DAN202U
D742	8-719-941-86	DIODE DAN202U
D771	8-719-404-40	DIODE MA121
D802	8-719-800-76	DIODE 1SS226
D901	8-719-106-44	DIODE RD9.1M-B2
D902	8-719-106-44	DIODE RD9.1M-B2

IC

IC101	8-752-815-30	IC CXP50116-093Q
IC102	8-759-502-36	IC S-81350HG
IC103	8-759-940-33	IC S-8052ALO-LG-S
IC104	8-759-946-03	IC S-8054ALR-LN-S
IC105	8-759-720-23	IC AK93C57F
IC106	8-759-009-22	IC MC14094BF
IC107	8-759-209-15	IC TC4SU69F
IC108	8-759-209-97	IC TC4S81F
IC109	8-759-209-97	IC TC4S81F
IC201	8-759-234-77	IC TC4S66F
IC202	8-759-234-77	IC TC4S66F
IC204	8-759-999-11	IC LM358D
IC206	8-752-815-31	IC CXP80116-805Q
IC301	1-809-200-11	ATF-HIC (PAL)
IC302	8-759-100-97	IC UPC339G2
IC401	8-759-945-17	IC MB3775PF
IC402	8-759-998-94	IC LM311D
IC403	8-759-990-55	IC CXA8006M
IC404	8-759-805-06	IC CXA1127M
IC405	8-759-107-68	IC CX20115A
IC601	8-752-036-19	IC CXA1207
IC651	8-759-710-86	IC NJM2233BM
IC701	8-752-036-20	IC CXA1208R
IC741	8-759-605-61	IC CXA1203N
IC771	8-752-033-40	IC CXA1201Q
IC802	8-759-012-00	IC MC10H116M
IC901	8-759-701-02	IC NJM2073M

CC-55 (CCD), CN-6 (CAMERA CONNECTOR), SV-66(VIDEO) PRINTED WIRING BOARDS

— Ref. No, CN-6 BOARD : 3000 series, CC-55 and SV-66 BOARDS : 5000series —



IC

01	8-752-815-30	IC CXP50116-093Q
02	8-759-502-36	IC S-81350HG
03	8-759-940-33	IC S-8052ALO-LG-S
04	8-759-946-03	IC S-8054ALR-LN-S
05	8-759-720-23	IC AK93C57F
06	8-759-009-22	IC MC14094BF
07	8-759-209-15	IC TC4SU69F
08	8-759-209-97	IC TC4S81F
09	8-759-209-97	IC TC4S81F
01	8-759-234-77	IC TC4S66F
02	8-759-234-77	IC TC4S66F
04	8-759-999-11	IC LM358D
06	8-752-815-31	IC CXP80116-805Q
01	1-809-200-11	ATF-HIC (PAL)
02	8-759-100-97	IC UPC339G2
01	8-759-945-17	IC MB3775PF
02	8-759-998-94	IC LM311D
03	8-759-990-55	IC CXA8006M
04	8-759-805-06	IC CXA1127M
05	8-759-107-68	IC CX20115A
01	8-752-036-19	IC CXA1207
51	8-759-710-86	IC NJM2233BM
01	8-752-036-20	IC CXA1208R
41	8-759-605-61	IC CXA1203N
71	8-752-033-40	IC CXA1201Q
02	8-759-012-00	IC MC10H116M
01	8-759-701-02	IC NJM2073M

TRANSISTOR

Q101	8-729-905-18	TRANSISTOR DTC144EU
Q102	8-729-905-35	TRANSISTOR 2SC4081R
Q103	8-729-220-93	TRANSISTOR 2SK209G
Q104	8-729-905-18	TRANSISTOR DTC144EU
Q105	8-729-905-35	TRANSISTOR 2SC4081R
Q106	8-729-905-23	TRANSISTOR 2SA1576R
Q107	8-729-220-93	TRANSISTOR 2SK209G
Q108	8-729-220-93	TRANSISTOR 2SK209G
Q109	8-729-905-12	TRANSISTOR DTA144EU
Q110	8-729-905-35	TRANSISTOR 2SC4081R
Q111	8-729-905-26	TRANSISTOR 2SA1576Q
Q112	8-729-905-26	TRANSISTOR 2SA1576Q
Q113	8-729-921-08	TRANSISTOR DTC144TU
Q114	8-729-403-24	TRANSISTOR XN4210
Q116	8-729-403-24	TRANSISTOR XN4210
Q117	8-729-905-18	TRANSISTOR DTC144EU
Q118	8-729-920-59	TRANSISTOR IMX2
Q120	8-729-905-35	TRANSISTOR 2SC4081R
Q201	8-729-905-35	TRANSISTOR 2SC4081R
Q202	8-729-905-35	TRANSISTOR 2SC4081R
Q203	8-729-921-08	TRANSISTOR DTC144TU
Q204	8-729-902-96	TRANSISTOR FMS1
Q205	8-729-903-82	TRANSISTOR FMW2
Q206	8-729-907-00	TRANSISTOR DTC114EU
Q207	8-729-905-35	TRANSISTOR 2SC4081
Q208	8-729-820-46	TRANSISTOR 2SB1202FAS
Q209	8-729-905-35	TRANSISTOR 2SC4081R
Q210	8-729-403-24	TRANSISTOR XN4210
Q212	8-729-905-12	TRANSISTOR DTA144EU
Q213	8-729-905-18	TRANSISTOR DTC144EU
Q214	8-729-905-18	TRANSISTOR DTC144EU
Q215	8-729-905-18	TRANSISTOR DTC144EU
Q216	8-729-905-35	TRANSISTOR 2SC4081R
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Q302	8-729-905-35	TRANSISTOR 2SC4081R
Q303	8-729-905-23	TRANSISTOR 2SA1576R
Q304	8-729-905-35	TRANSISTOR 2SC4081R
Q305	8-729-905-18	TRANSISTOR DTC144EU
Q306	8-729-905-18	TRANSISTOR DTC144EU
Q307	8-729-920-48	TRANSISTOR IMH2
Q401	8-729-905-35	TRANSISTOR 2SC4081R
Q402	8-729-901-04	TRANSISTOR DTA114EK
Q403	8-729-905-35	TRANSISTOR 2SC4081R
Q404	8-729-805-25	TRANSISTOR 2SB1121
Q405	8-729-905-35	TRANSISTOR 2SC4081R
Q406	8-729-905-61	TRANSISTOR DTC124EU
Q407	8-729-905-35	TRANSISTOR 2SC4081R
Q408	8-729-805-25	TRANSISTOR 2SB1121
Q409	8-729-805-25	TRANSISTOR 2SB1121
Q410	8-729-805-25	TRANSISTOR 2SB1121
Q411	8-729-805-25	TRANSISTOR 2SB1121
Q412	8-729-905-35	TRANSISTOR 2SC4081R
Q413	8-729-907-00	TRANSISTOR DTC114EU
Q415	8-729-905-18	TRANSISTOR DTC144EU
Q416	8-729-905-12	TRANSISTOR DTA144EU
Q418	8-729-141-48	TRANSISTOR 2SB624-BV345
Q419	8-729-907-00	TRANSISTOR DTC114EU
Q420	8-729-907-00	TRANSISTOR DTC114EU
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Q602	8-729-905-35	TRANSISTOR 2SC4081R
Q603	8-729-905-35	TRANSISTOR 2SC4081R
Q604	8-729-905-35	TRANSISTOR 2SC4081R
Q605	8-729-905-23	TRANSISTOR 2SA1576R
Q609	8-729-905-18	TRANSISTOR DTC144EU
Q651	8-729-905-23	TRANSISTOR 2SA1576R
Q652	8-729-905-35	TRANSISTOR 2SC4081R
Q653	8-729-905-35	TRANSISTOR 2SC4081R
Q654	8-729-905-23	TRANSISTOR 2SA1576R
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Q658	8-729-905-35	TRANSISTOR 2SC4081R
Q659	8-729-905-35	TRANSISTOR 2SC4081R
Q660	8-729-905-23	TRANSISTOR 2SA1576R
Q661	8-729-905-12	TRANSISTOR DTA144EU
Q662	8-729-905-18	TRANSISTOR DTC144EU
Q663	8-729-920-48	TRANSISTOR IMH2
Q665	8-729-905-35	TRANSISTOR 2SC4081R
Q701	8-729-905-35	TRANSISTOR 2SC4081R
Q702	8-729-905-18	TRANSISTOR DTC144EU
Q703	8-729-905-35	TRANSISTOR 2SC4081R
Q704	8-729-905-18	TRANSISTOR DTC144EU
Q705	8-729-905-35	TRANSISTOR 2SC4081R
Q706	8-729-905-23	TRANSISTOR 2SA1576R
Q707	8-729-905-35	TRANSISTOR 2SC4081R
Q709	8-729-905-18	TRANSISTOR DTC144EU
Q741	8-729-905-18	TRANSISTOR DTC144EU
Q743	8-729-905-12	TRANSISTOR DTA144EU
Q744	8-729-907-39	TRANSISTOR IMD2
Q745	8-729-920-48	TRANSISTOR IMH2
Q746	8-729-905-35	TRANSISTOR 2SC4081R
Q747	8-729-905-35	TRANSISTOR 2SC4081R
Q748	8-729-905-18	TRANSISTOR DTC144EU
Q749	8-729-102-07	TRANSISTOR 2SC2223-F13
Q750	8-729-905-35	TRANSISTOR 2SC4081R
Q751	8-729-905-35	TRANSISTOR 2SC4081R
Q771	8-729-907-00	TRANSISTOR DTC114EU
Q772	8-729-905-12	TRANSISTOR DTA144EU
Q773	8-729-905-18	TRANSISTOR DTC144EU
Q774	8-729-905-18	TRANSISTOR DTC144EU
Q775	8-729-905-35	TRANSISTOR 2SC4081R
Q777	8-729-9	
Q778	8-729-9	
Q779	8-729-9	
Q780	8-729-	
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Q809	8-729-9	
Q813	8-729-9	
Q814	8-729-	
Q815	8-729-9	
Q818	8-729-8	
Q819	8-729-	
Q820	8-729-9	
Q822	8-729-9	
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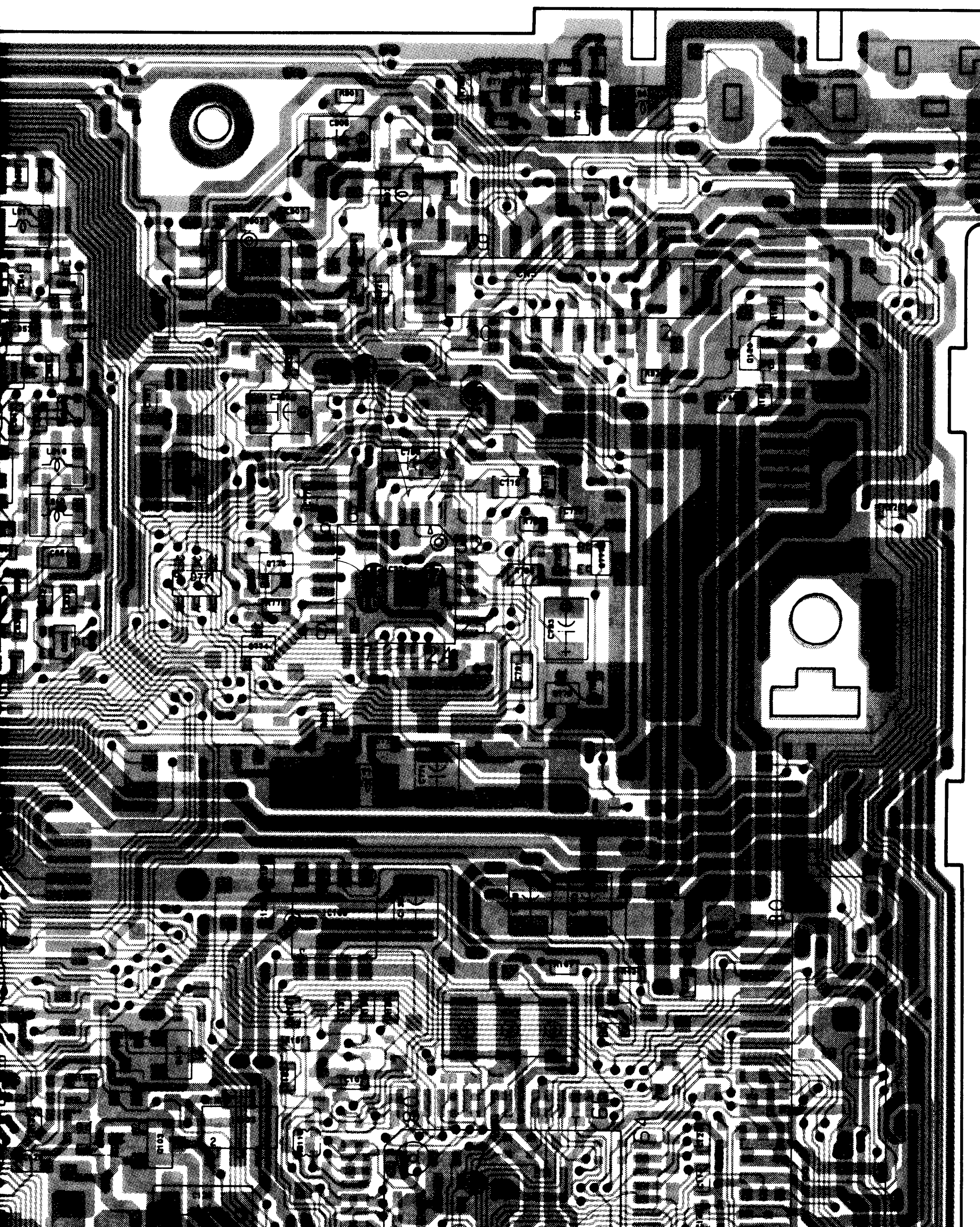
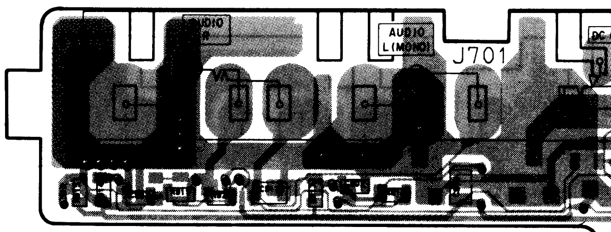
Q912	8-729-9	

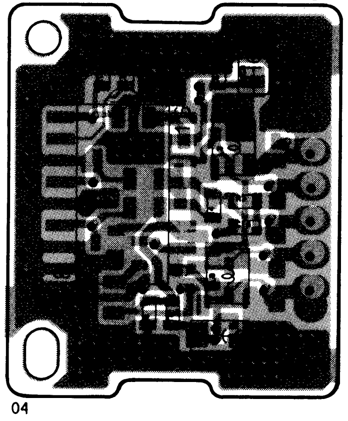




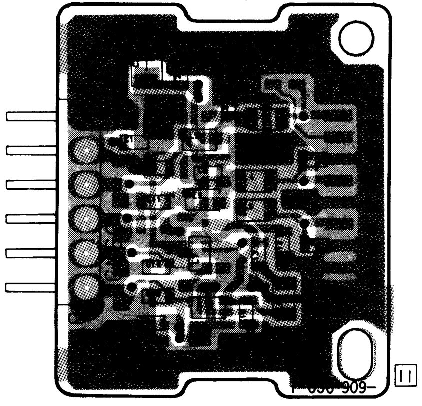
IC

IC001 8-752-333-24 IC CXL1506M

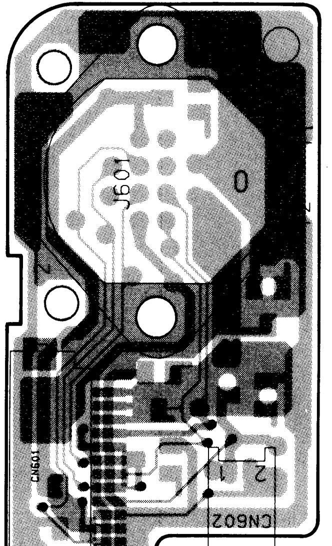
CC-55 BOARD (CONDUCTOR SIDE)



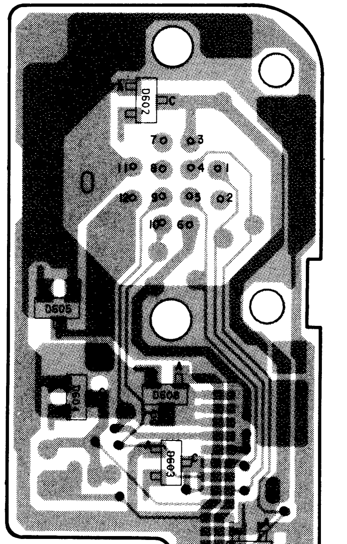
CC-55 BOARD (COMPONENT SIDE)



CN-6P BOARD
(COMPONENT SIDE)



CN-6P BOARD
(CONDUCTOR SIDE)



DIODE

D602	8-719-106-43	DIODE RD9.1M-T1B1
D603	8-719-106-43	DIODE RD9.1M-T1B1
D604	8-719-106-43	DIODE RD9.1M-T1B1
D605	8-719-106-43	DIODE RD9.1M-T1B1
D606	8-719-106-43	DIODE RD9.1M-T1B1
D608	8-719-106-43	DIODE RD9.1M-T1B1

905-35 TRANSISTOR 2SC4081R
905-35 TRANSISTOR 2SC4081R
905-23 TRANSISTOR 2SA1576R
905-35 TRANSISTOR 2SC4081R
905-35 TRANSISTOR 2SC4081R

905-23 TRANSISTOR 2SA1576R
905-12 TRANSISTOR DTA144EU
905-18 TRANSISTOR DTC144EU
920-48 TRANSISTOR IMH2
905-35 TRANSISTOR 2SC4081R

905-35 TRANSISTOR 2SC4081R
905-18 TRANSISTOR DTC144EU
905-35 TRANSISTOR 2SC4081R
905-18 TRANSISTOR DTC144EU
905-35 TRANSISTOR 2SC4081R

905-23 TRANSISTOR 2SA1576R
905-35 TRANSISTOR 2SC4081R
905-18 TRANSISTOR DTC144EU
905-18 TRANSISTOR DTC144EU
905-12 TRANSISTOR DTA144EU

907-39 TRANSISTOR IMD2
920-48 TRANSISTOR IMH2
905-35 TRANSISTOR 2SC4081R
905-35 TRANSISTOR 2SC4081R
905-18 TRANSISTOR DTC144EU

102-07 TRANSISTOR 2SC2223-F13
905-35 TRANSISTOR 2SC4081R
905-35 TRANSISTOR 2SC4081R

907-00 TRANSISTOR DTC114EU
905-12 TRANSISTOR DTA144EU
905-18 TRANSISTOR DTC144EU
905-18 TRANSISTOR DTC144EU
905-35 TRANSISTOR 2SC4081R

Q777 8-729-905-23 TRANSISTOR 2SA1576R
Q778 8-729-905-18 TRANSISTOR DTC144EU
Q779 8-729-905-35 TRANSISTOR 2SC4081R
Q780 8-729-141-48 TRANSISTOR 2SB624-BV345
Q804 8-729-905-35 TRANSISTOR 2SC4081R

Q806 8-729-905-12 TRANSISTOR DTA144EU
Q808 8-729-905-35 TRANSISTOR 2SC4081R
Q809 8-729-905-23 TRANSISTOR 2SA1576R
Q813 8-729-905-18 TRANSISTOR DTC144EU
Q814 8-729-141-48 TRANSISTOR 2SB624-BV345

Q815 8-729-905-35 TRANSISTOR 2SC4081R
Q818 8-729-822-51 TRANSISTOR 2SK1469-FA
Q819 8-729-141-48 TRANSISTOR 2SB624-BV345
Q820 8-729-905-18 TRANSISTOR DTC144EU
Q822 8-729-905-35 TRANSISTOR 2SC4081R

Q823 8-729-905-23 TRANSISTOR 2SA1576R
Q824 8-729-905-35 TRANSISTOR 2SC4081R
Q825 8-729-905-23 TRANSISTOR 2SA1576R
Q826 8-729-905-35 TRANSISTOR 2SC4081R
Q827 8-729-905-35 TRANSISTOR 2SC4081R

Q831 8-729-920-48 TRANSISTOR IMH2
Q901 8-729-905-35 TRANSISTOR 2SC4081R
Q902 8-729-141-48 TRANSISTOR 2SB624-BV345
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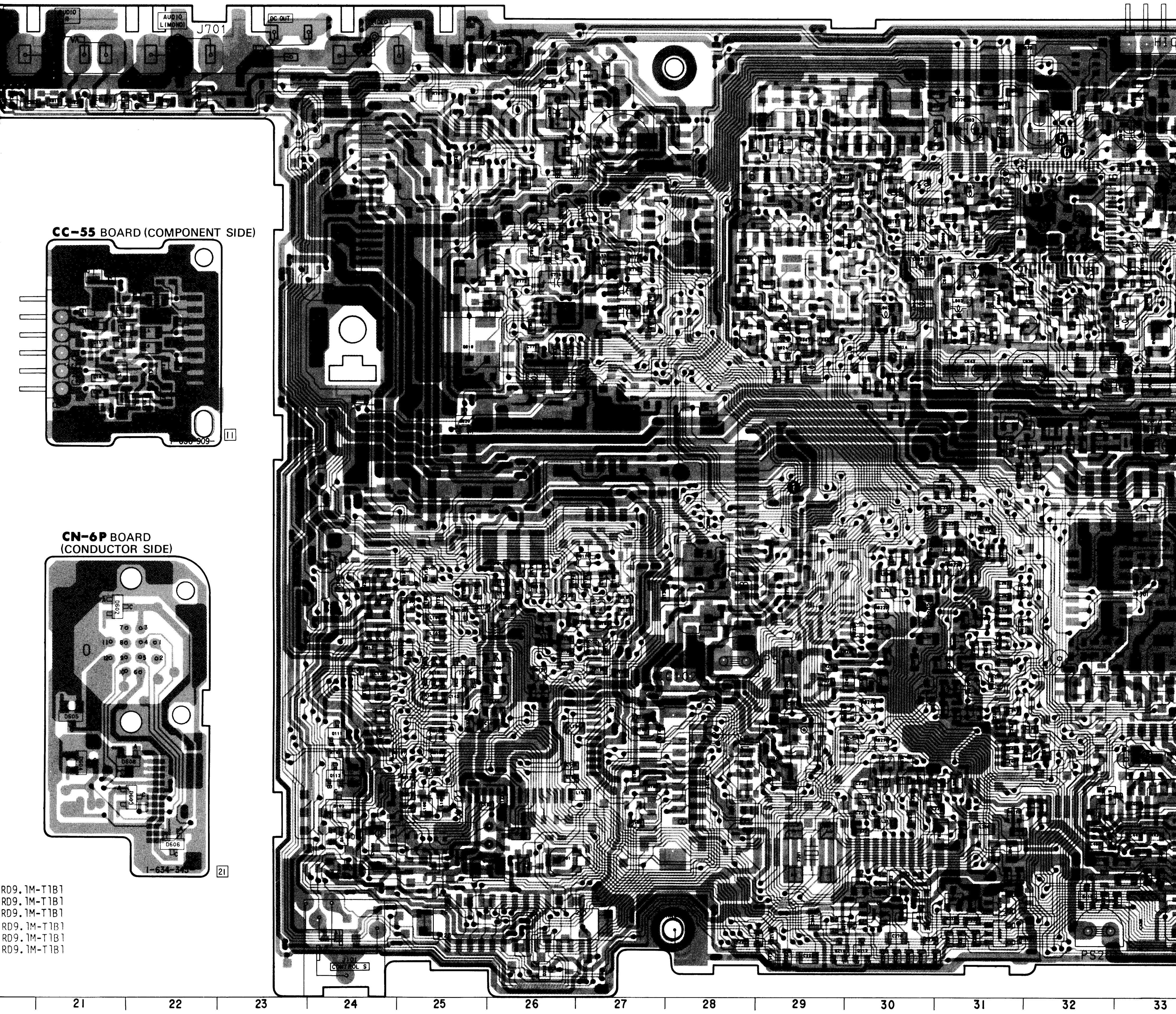
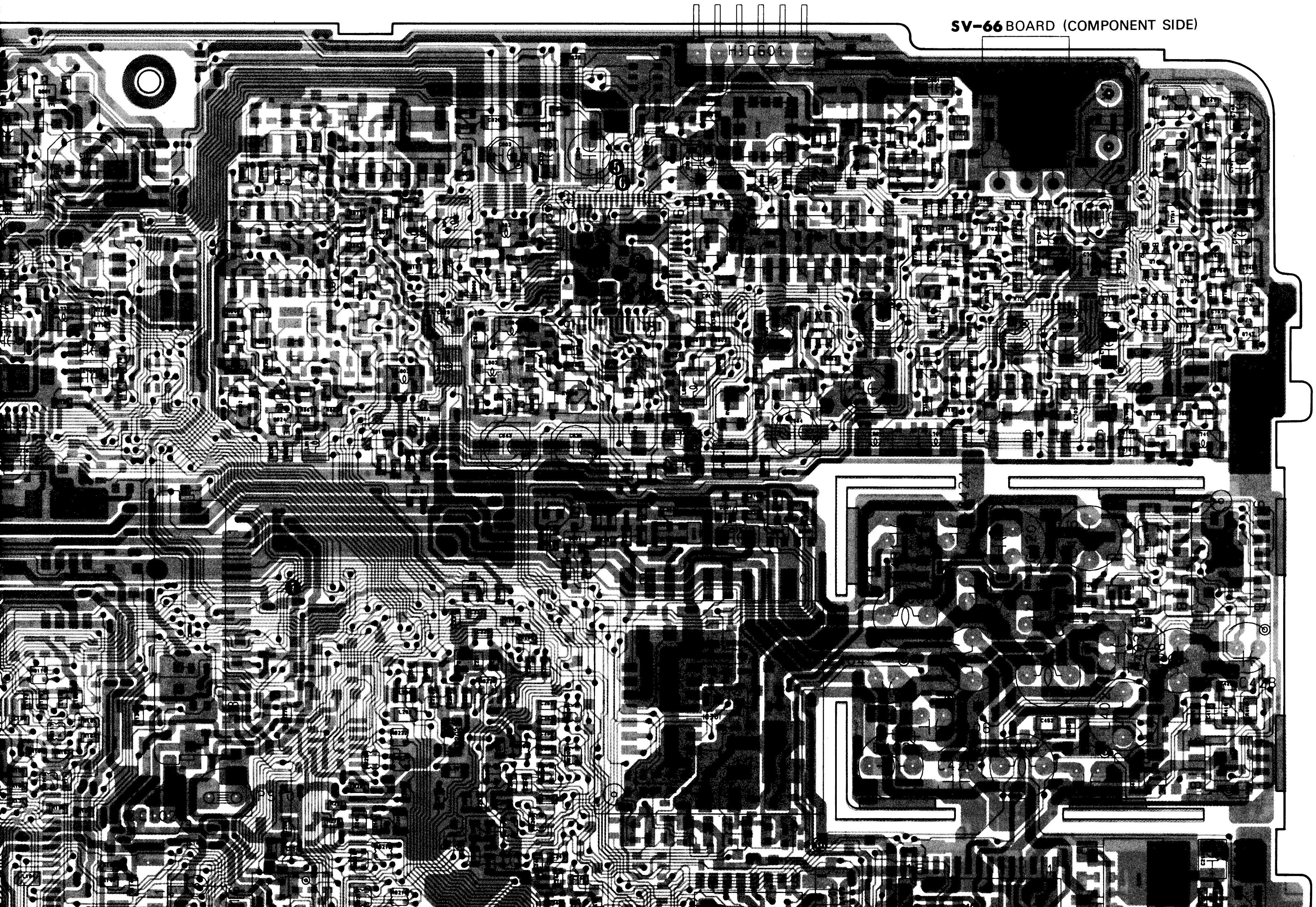

CC-55 BOARD (COMPONENT SIDE)

CN-6P BOARD
(CONDUCTOR SIDE)

RD9.1M-T1B1
RD9.1M-T1B1
RD9.1M-T1B1
RD9.1M-T1B1
RD9.1M-T1B1
RD9.1M-T1B1


SV-66 BOARD (COMPONENT SIDE)

HIC601
PS2
1-630-907-
11
27
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37
38

DIODE		
D101	8-719-938-72	DIODE SB01-05CP
D103	8-719-105-52	DIODE RD3.6M-B2
D104	8-719-105-XX	DIODE RD6.2M-B1
D107	8-719-941-09	DIODE DAP202U
D108	8-719-404-40	DIODE MA121
D201	8-719-941-86	DIODE DAN202U
D202	8-719-404-40	DIODE MA121
D203	8-719-404-40	DIODE MA121
D204	8-719-941-09	DIODE DAP202U
D205	8-719-941-09	DIODE DAP202U
D206	8-719-941-09	DIODE DAP202U
D301	8-719-941-86	DIODE DAN202U
D401	8-719-938-78	DIODE SB10-05PCP
D402	8-719-941-09	DIODE DAP202U
D403	8-719-938-75	DIODE SB05-05CP
D404	8-719-938-75	DIODE SB05-05CP
D601	8-719-404-40	DIODE MA121
D701	8-719-941-86	DIODE DAN202U
D702	8-719-941-86	DIODE DAN202U
D741	8-719-941-86	DIODE DAN202U
D742	8-719-941-86	DIODE DAN202U
D771	8-719-404-40	DIODE MA121
D802	8-719-800-76	DIODE 1SS226
D901	8-719-106-44	DIODE RD9.1M-B2
D902	8-719-106-44	DIODE RD9.1M-B2

IC		
IC101	8-752-815-30	IC CXP50116-093Q
IC102	8-759-502-36	IC S-81350HG
IC103	8-759-940-33	IC S-8052AL0-LG-S
IC104	8-759-946-03	IC S-8054ALR-LN-S
IC105	8-759-720-23	IC AK93C57F
IC106	8-759-009-22	IC MC14094BF
IC107	8-759-209-15	IC TC4SU69F
IC108	8-759-209-97	IC TC4S81F
IC109	8-759-209-97	IC TC4S81F
IC201	8-759-234-77	IC TC4S66F
IC202	8-759-234-77	IC TC4S66F
IC204	8-759-999-11	IC LM358D
IC206	8-752-815-31	IC CXP80116-805Q
IC301	1-809-200-11	ATF-HIC (PAL)
IC302	8-759-100-97	IC UPC339G2
IC401	8-759-945-17	IC MB3775PF
IC402	8-759-998-94	IC LM311D
IC403	8-759-990-55	IC CXA8006M
IC404	8-759-805-06	IC CXA1127M
IC405	8-759-107-68	IC CX20115A
IC601	8-752-036-19	IC CXA1207
IC651	8-759-710-86	IC NJM2233BM
IC701	8-752-036-20	IC CXA1208R
IC741	8-759-605-61	IC CXA1203N
IC771	8-752-033-40	IC CXA1201Q
IC802	8-759-012-00	IC MC10H116M
IC901	8-759-701-02	IC NJM2073M

Q101	8-729-
Q102	8-729-
Q103	8-729-
Q104	8-729-
Q105	8-729-
Q106	8-729-
Q107	8-729-
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Q109	8-729-
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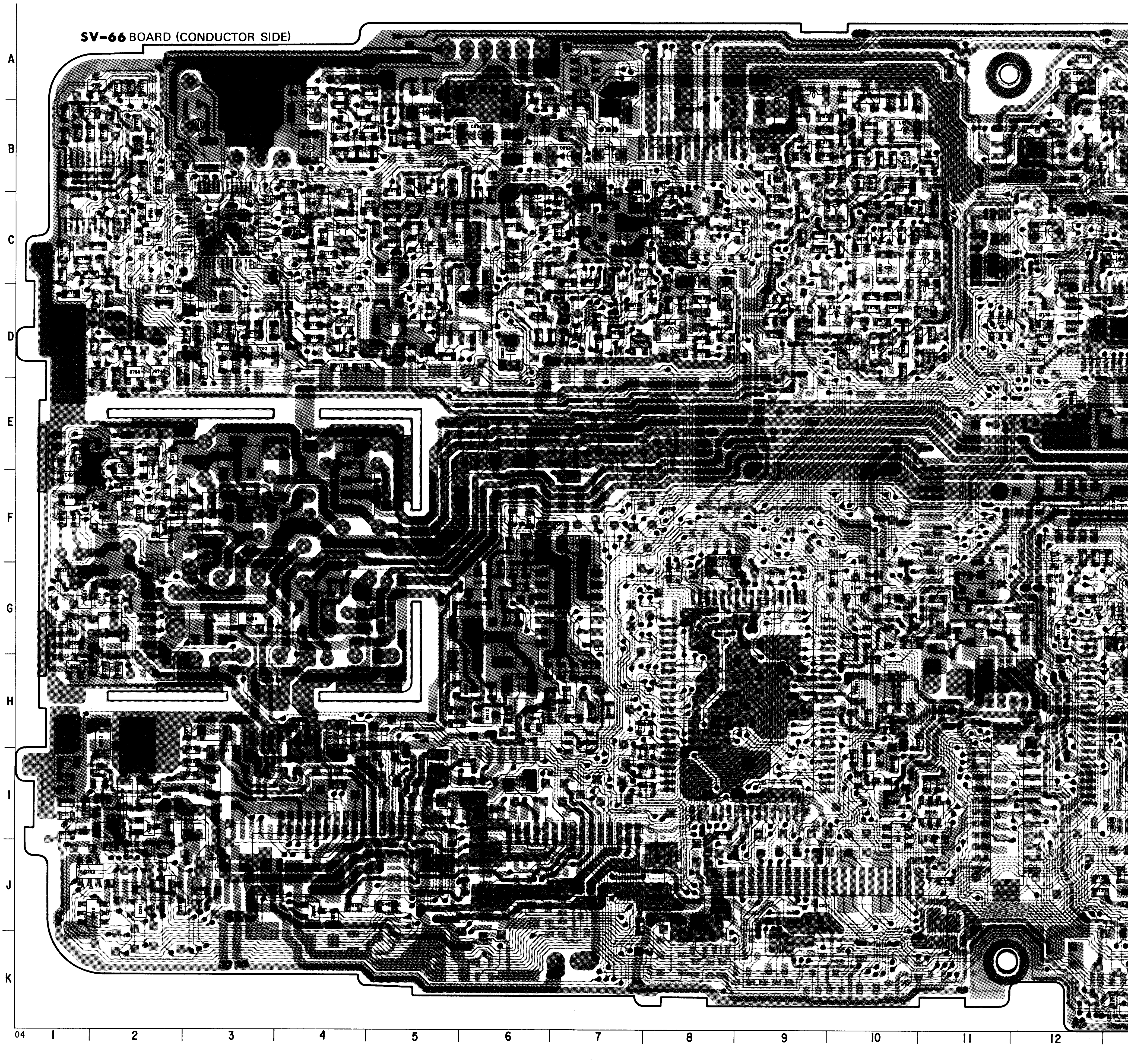
Q213	8-729-
Q214	8-729-
Q215	8-729-
Q216	8-729-
Q301	8-729-
Q302	8-729-

SV-66 (SERVO, SYSTEM CONTROL) PRINTED WIRING BOARD

— Ref. No, SV-66 BOARD : 5000 series —



93Q
LG-S
LN-S
05Q

TRANSISTOR

Q101	8-729-905-18	TRANSISTOR DTC144EU
Q102	8-729-905-35	TRANSISTOR 2SC4081R
Q103	8-729-220-93	TRANSISTOR 2SK209G
Q104	8-729-905-18	TRANSISTOR DTC144EU
Q105	8-729-905-35	TRANSISTOR 2SC4081R
Q106	8-729-905-23	TRANSISTOR 2SA1576R
Q107	8-729-220-93	TRANSISTOR 2SK209G
Q108	8-729-220-93	TRANSISTOR 2SK209G
Q109	8-729-905-12	TRANSISTOR DTA144EU
Q110	8-729-905-35	TRANSISTOR 2SC4081R
Q111	8-729-905-26	TRANSISTOR 2SA1576Q
Q112	8-729-905-26	TRANSISTOR 2SA1576Q
Q113	8-729-921-08	TRANSISTOR DTC144TU
Q114	8-729-403-24	TRANSISTOR XN4210
Q116	8-729-403-24	TRANSISTOR XN4210
Q117	8-729-905-18	TRANSISTOR DTC144EU
Q118	8-729-920-59	TRANSISTOR IMX2
Q120	8-729-905-35	TRANSISTOR 2SC4081R
Q201	8-729-905-35	TRANSISTOR 2SC4081R
Q202	8-729-905-35	TRANSISTOR 2SC4081R
Q203	8-729-921-08	TRANSISTOR DTC144TU
Q204	8-729-902-96	TRANSISTOR FMS1
Q205	8-729-903-82	TRANSISTOR FMW2
Q206	8-729-907-00	TRANSISTOR DTC114EU
Q207	8-729-905-35	TRANSISTOR 2SC4081
Q208	8-729-820-46	TRANSISTOR 2SB1202FAS
Q209	8-729-905-35	TRANSISTOR 2SC4081R
Q210	8-729-403-24	TRANSISTOR XN4210
Q212	8-729-905-12	TRANSISTOR DTA144EU
Q213	8-729-905-18	TRANSISTOR DTC144EU
Q214	8-729-905-18	TRANSISTOR DTC144EU
Q215	8-729-905-18	TRANSISTOR DTC144EU
Q216	8-729-905-35	TRANSISTOR 2SC4081R
Q301	8-729-905-23	TRANSISTOR 2SA1576R
Q302	8-729-905-35	TRANSISTOR 2SC4081R
Q303	8-729-905-23	TRANSISTOR 2SA1576R
Q304	8-729-905-35	TRANSISTOR 2SC4081R
Q305	8-729-905-18	TRANSISTOR DTC144EU
Q306	8-729-905-18	TRANSISTOR DTC144EU
Q307	8-729-920-48	TRANSISTOR IMH2
Q401	8-729-905-35	TRANSISTOR 2SC4081R
Q402	8-729-901-04	TRANSISTOR DTA114EK
Q403	8-729-905-35	TRANSISTOR 2SC4081R
Q404	8-729-805-25	TRANSISTOR 2SB1121
Q405	8-729-905-35	TRANSISTOR 2SC4081R
Q406	8-729-905-61	TRANSISTOR DTC124EU
Q407	8-729-905-35	TRANSISTOR 2SC4081R
Q408	8-729-805-25	TRANSISTOR 2SB1121
Q409	8-729-805-25	TRANSISTOR 2SB1121
Q410	8-729-805-25	TRANSISTOR 2SB1121
Q411	8-729-805-25	TRANSISTOR 2SB1121
Q412	8-729-905-35	TRANSISTOR 2SC4081R
Q413	8-729-907-00	TRANSISTOR DTC114EU
Q415	8-729-905-18	TRANSISTOR DTC144EU
Q416	8-729-905-12	TRANSISTOR DTA144EU
Q418	8-729-141-48	TRANSISTOR 2SB624-BV345
Q419	8-729-907-00	TRANSISTOR DTC114EU
Q420	8-729-907-00	TRANSISTOR DTC114EU
Q601	8-729-905-12	TRANSISTOR DTA144EU
Q602	8-729-905-35	TRANSISTOR 2SC4081R
Q603	8-729-905-35	TRANSISTOR 2SC4081R
Q604	8-729-905-35	TRANSISTOR 2SC4081R
Q605	8-729-905-23	TRANSISTOR 2SA1576R
Q609	8-729-905-18	TRANSISTOR DTC144EU
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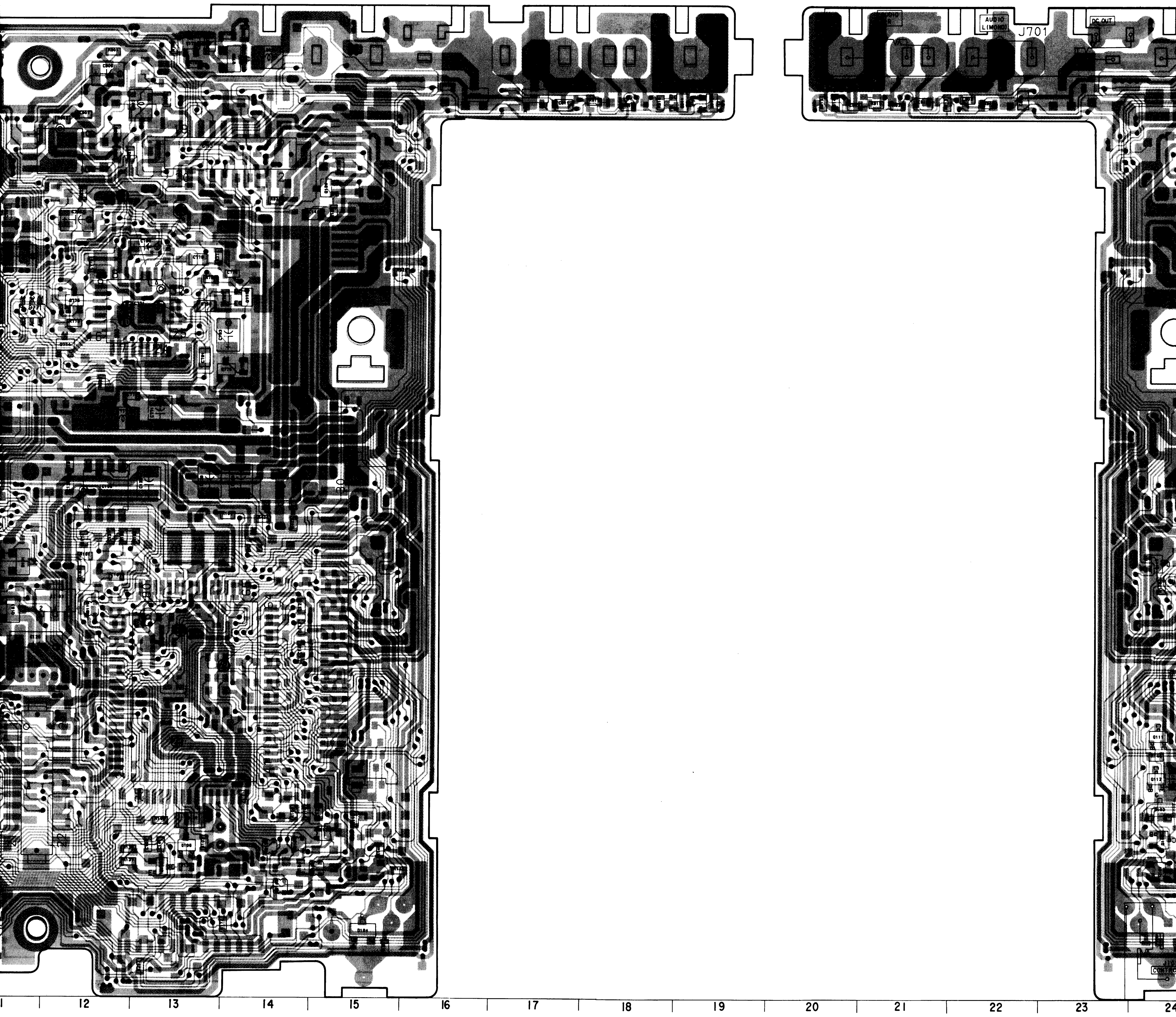
Q661	8-729-905-12	TRANSISTOR DTA144EU
Q662	8-729-905-18	TRANSISTOR DTC144EU
Q663	8-729-920-48	TRANSISTOR IMH2
Q665	8-729-905-35	TRANSISTOR 2SC4081R
Q701	8-729-905-35	TRANSISTOR 2SC4081R
Q702	8-729-905-18	TRANSISTOR DTC144EU
Q703	8-729-905-35	TRANSISTOR 2SC4081R
Q704	8-729-905-18	TRANSISTOR DTC144EU
Q705	8-729-905-35	TRANSISTOR 2SC4081R
Q706	8-729-905-23	TRANSISTOR 2SA1576R
Q707	8-729-905-35	TRANSISTOR 2SC4081R
Q709	8-729-905-18	TRANSISTOR DTC144EU
Q741	8-729-905-18	TRANSISTOR DTC144EU
Q743	8-729-905-12	TRANSISTOR DTA144EU
Q744	8-729-907-39	TRANSISTOR IMD2
Q745	8-729-920-48	TRANSISTOR IMH2
Q746	8-729-905-35	TRANSISTOR 2SC4081R
Q747	8-729-905-35	TRANSISTOR 2SC4081R
Q748	8-729-905-18	TRANSISTOR DTC144EU
Q749	8-729-102-07	TRANSISTOR 2SC2223-F13
Q750	8-729-905-35	TRANSISTOR 2SC4081R
Q751	8-729-905-35	TRANSISTOR 2SC4081R
Q771	8-729-907-00	TRANSISTOR DTC114EU
Q772	8-729-905-12	TRANSISTOR DTA144EU
Q773	8-729-905-18	TRANSISTOR DTC144EU
Q774	8-729-905-18	TRANSISTOR DTC144EU
Q775	8-729-905-35	TRANSISTOR 2SC4081R
Q777	8-729-905-23	TRANSISTOR 2SA1576R
Q778	8-729-905-18	TRANSISTOR DTC144EU
Q779	8-729-905-35	TRANSISTOR 2SC4081R
Q780	8-729-141-48	TRANSISTOR 2SB624-BV345
Q804	8-729-905-35	TRANSISTOR 2SC4081R
Q806	8-729-905-12	TRANSISTOR DTA144EU
Q808	8-729-905-35	TRANSISTOR 2SC4081R
Q809	8-729-905-23	TRANSISTOR 2SA1576R
Q813	8-729-905-18	TRANSISTOR DTC144EU
Q814	8-729-141-48	TRANSISTOR 2SB624-BV345
Q815	8-729-905-35	TRANSISTOR 2SC4081R
Q818	8-729-822-51	TRANSISTOR 2SK1469-FA
Q819	8-729-141-48	TRANSISTOR 2SB624-BV345
Q820	8-729-905-18	TRANSISTOR DTC144EU
Q822	8-729-905-35	TRANSISTOR 2SC4081R
Q823	8-729-905-23	TRANSISTOR 2SA1576R
Q824	8-729-905-35	TRANSISTOR 2SC4081R
Q825	8-729-905-23	TRANSISTOR 2SA1576R
Q826	8-729-905-35	TRANSISTOR 2SC4081R
Q827	8-729-905-35	TRANSISTOR 2SC4081R
Q831	8-729-920-48	TRANSISTOR IMH2
Q901	8-729-905-35	TRANSISTOR 2SC4081R
Q902	8-729-141-48	TRANSISTOR 2SB624-BV345
Q911	8-729-905-35	TRANSISTOR 2SC4081R
Q912	8-729-905-35	TRANSISTOR 2SC4081R



TEM CONTROL   SERVO, SYSTEM CONTROL

TOR 2SC4081R
TOR 2SC4081R
TOR 2SA1576R
TOR 2SC4081R
TOR 2SC4081R

TOR 2SA1576R
TOR DTA144EU
TOR DTC144EU
TOR IMH2
TOR 2SC4081R

TOR 2SC4081R
TOR DTC144EU
TOR 2SC4081R
TOR DTC144EU
TOR 2SC4081R

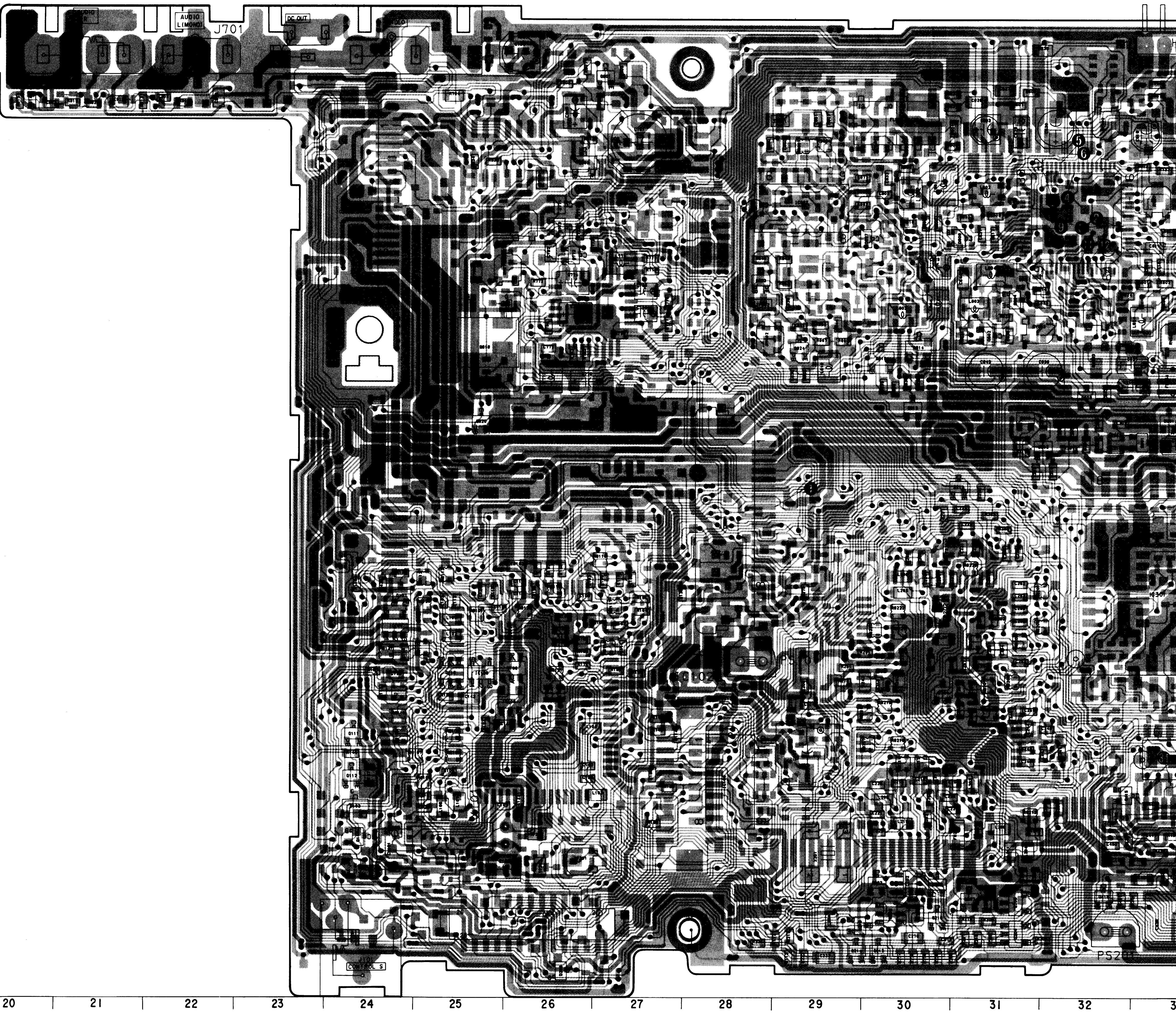
TOR 2SA1576R
TOR 2SC4081R
TOR DTC144EU
TOR DTC144EU
TOR DTA144EU

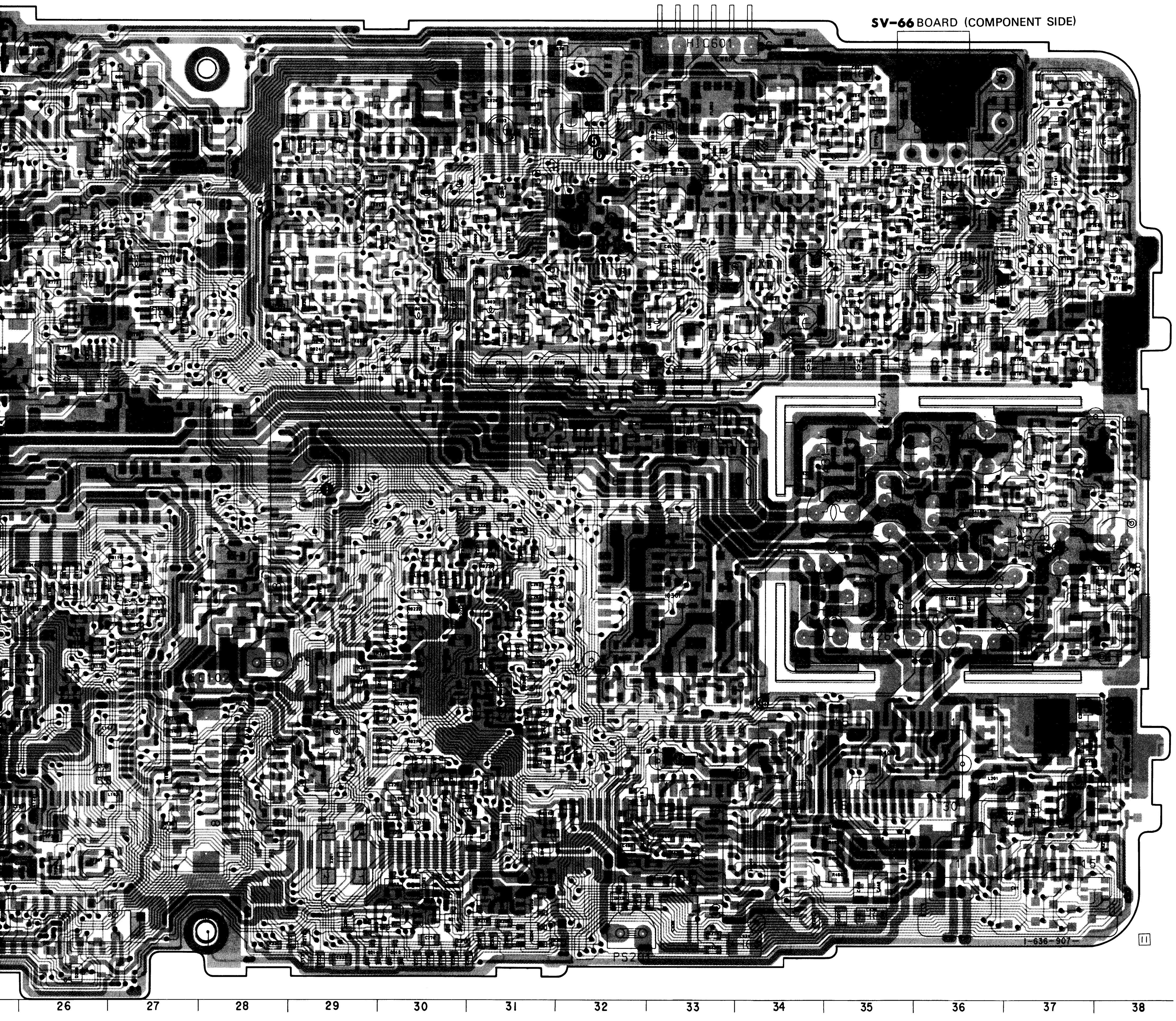
TOR IMD2
TOR IMH2
TOR 2SC4081R
TOR 2SC4081R
TOR DTC144EU

TOR 2SC2223-F13
TOR 2SC4081R
TOR 2SC4081R

TOR DTC114EU
TOR DTA144EU
TOR DTC144EU
TOR DTC144EU
TOR 2SC4081R

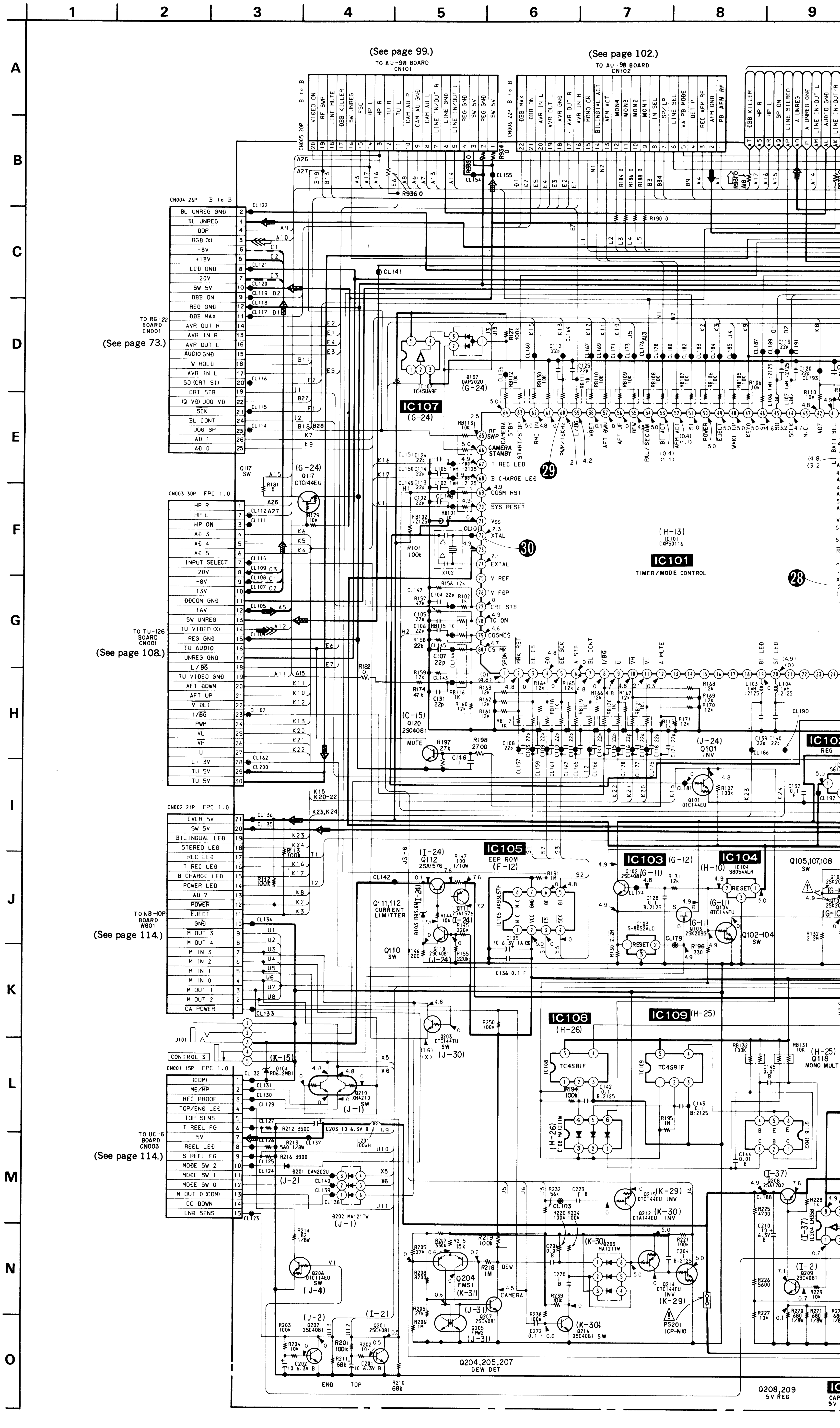
Q777	8-729-905-23	TRANSISTOR 2SA1576R
Q778	8-729-905-18	TRANSISTOR DTC144EU
Q779	8-729-905-35	TRANSISTOR 2SC4081R
Q780	8-729-141-48	TRANSISTOR 2SB624-BV345
Q804	8-729-905-35	TRANSISTOR 2SC4081R
Q806	8-729-905-12	TRANSISTOR DTA144EU
Q808	8-729-905-35	TRANSISTOR 2SC4081R
Q809	8-729-905-23	TRANSISTOR 2SA1576R
Q813	8-729-905-18	TRANSISTOR DTC144EU
Q814	8-729-141-48	TRANSISTOR 2SB624-BV345
Q815	8-729-905-35	TRANSISTOR 2SC4081R
Q818	8-729-822-51	TRANSISTOR 2SK1469-FA
Q819	8-729-141-48	TRANSISTOR 2SB624-BV345
Q820	8-729-905-18	TRANSISTOR DTC144EU
Q822	8-729-905-35	TRANSISTOR 2SC4081R
Q823	8-729-905-23	TRANSISTOR 2SA1576R
Q824	8-729-905-35	TRANSISTOR 2SC4081R
Q825	8-729-905-23	TRANSISTOR 2SA1576R
Q826	8-729-905-35	TRANSISTOR 2SC4081R
Q827	8-729-905-35	TRANSISTOR 2SC4081R
Q831	8-729-920-48	TRANSISTOR IMH2
Q901	8-729-905-35	TRANSISTOR 2SC4081R
Q902	8-729-141-48	TRANSISTOR 2SB624-BV345
Q911	8-729-905-35	TRANSISTOR 2SC4081R
Q912	8-729-905-35	TRANSISTOR 2SC4081R




SV-66 BOARD (COMPONENT SIDE)
HIC601
IC424
PS201
1-636-907-

SV-66 (SERVO, SYSTEM CONTROL) SCHEMATIC DIAGRAM

— Ref. No, SV-66 BOARD : 5000 series —


1
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A
B
C
D
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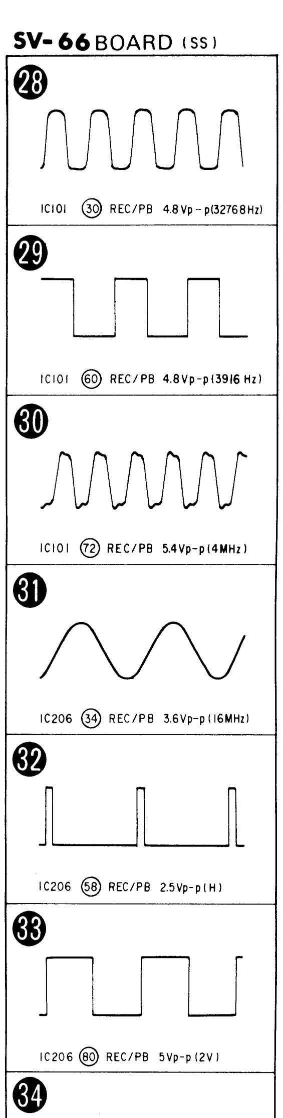
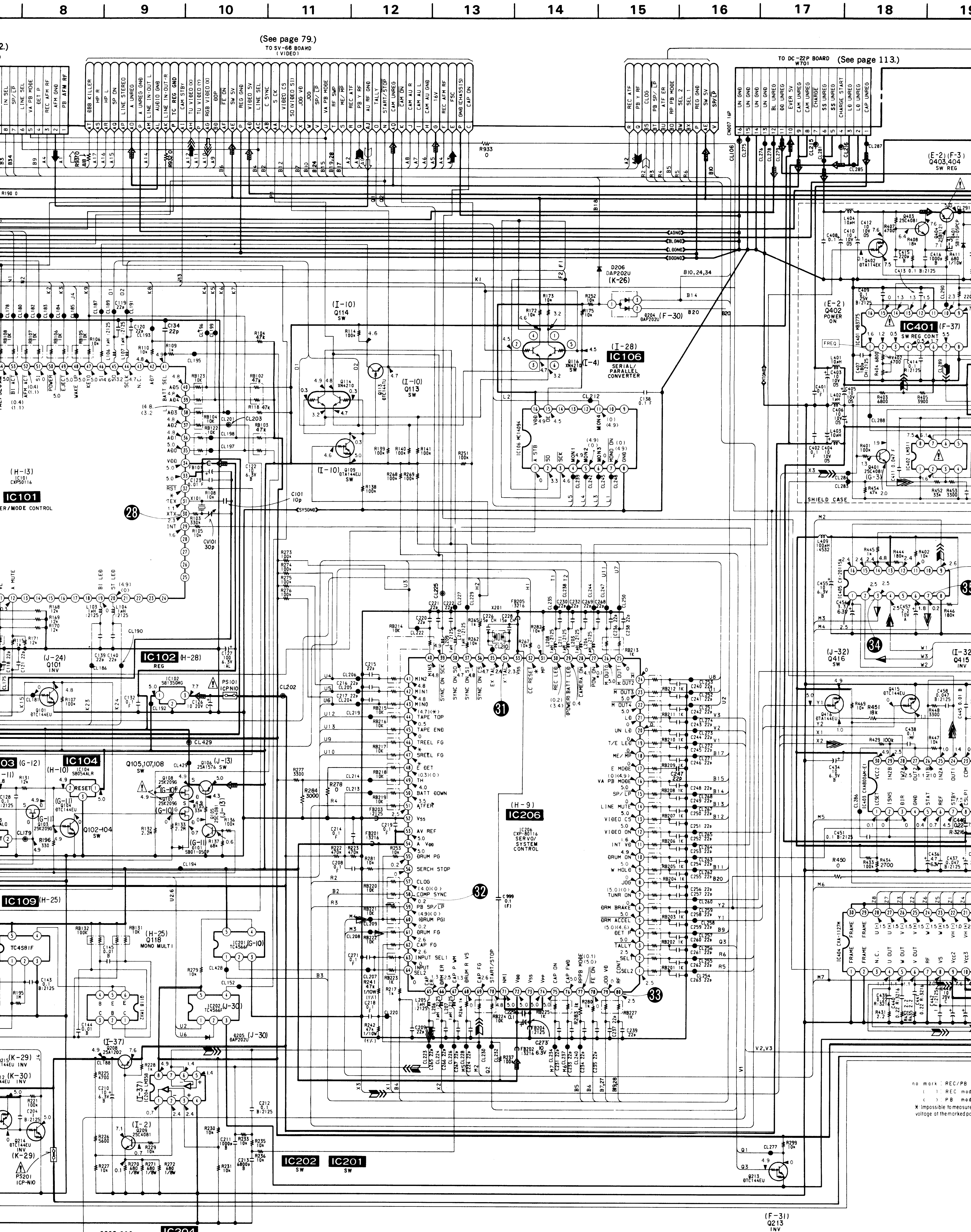
F
G
H
I
J
K
L
M
N
O
(See page 99.)
TO AU-98 BOARD CN101
(See page 102.)
TO AU-98 BOARD CN102
CN005 20P B to B
CN006 22P B to B
CN004 26P B to B
TO RG-22 BOARD CN001
(See page 73.)
CN003 30P FPC 1.0
TO TU-126 BOARD CN001
(See page 108.)
CN002 21P FPC 1.0
TO KB-10P BOARD W801
(See page 114.)
CN001 15P FPC 1.0
TO UC-6 BOARD CN003
(See page 114.)
CONTROL S
J101
IC107
(G-24)
IC101
CXP50116
(H-13)
TIMER/MODE CONTROL
IC105
EEP ROM
(F-12)
IC103
(G-12)
IC104
S8054ALR
(H-10)
IC108
(H-26)
TC4S81F
IC109
(H-25)
TC4S81F
Q117 SW
Q120 2SC4081 MUTE
Q101 DTC144EU INV
Q111,112 CURRENT LIMITTER
Q110 SW
Q203 DTC144TU
Q210 XN4210 SW
Q206 DTC114EU SW
Q202 2SC4081
Q201 2SC4081
Q204,205,207 DEW DET
Q215 DTC144EU INV
Q212 DTA144EU INV
Q214 DTC144EU INV
Q216 2SC4081 SW
PS201 ICP-N10
Q208,209 5V REG
Q105,107,108 SW
Q102-104 SW
Q118 MONO MULT
END
TOP
DEW
CAMERA
(28)
(29)
(30)




8
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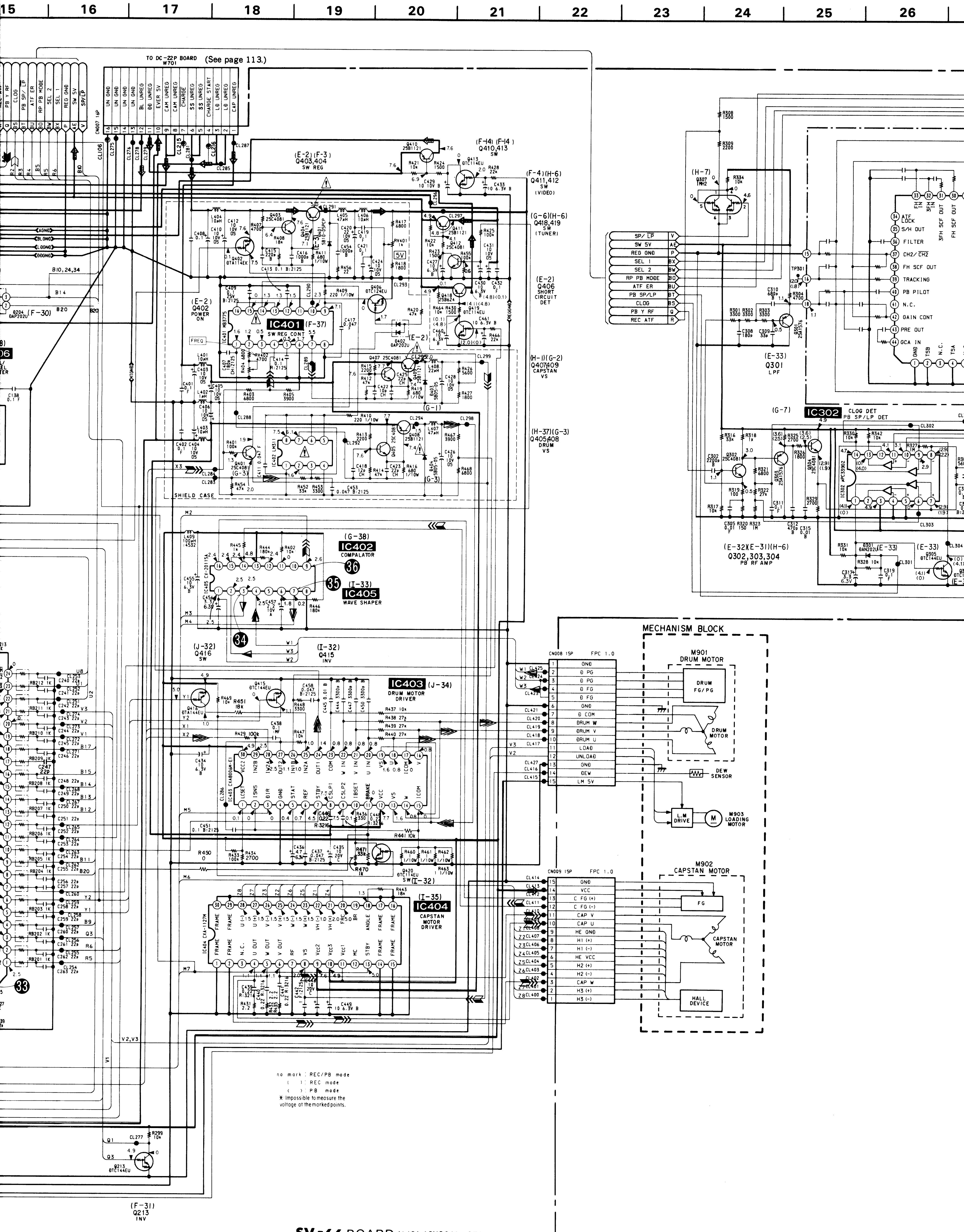
14
15
16
17
18
(See page 79.)
TO SV-66 BOARD (VIDEO)
TO DC-22P BOARD W701
(See page 113.)
IC101
CXP50116
/MODE CONTROL
IC102 (H-28)
REG
IC104
S8054ALR
IC106 (I-28)
SERIAL/PARALLEL CONVERTER
MC14094
IC109 (H-25)
TC4S81F
IC201 (G-10)
IC202 (J-30)
TC4S66F
IC204
CAP ERR AMP.
5V REG CONT
IC206 (H-9)
CXP-80116
SERVO/SYSTEM CONTROL
IC401 (F-37)
SW REG CONT
IC402
IC404 CXA-1127M
IC405
Q101 DTC144EU INV
Q102-104 SW
Q105,107,108 SW
Q106 (J-13) 2SA1576 SW
Q109 DTA144EU SW
Q113 (I-10) SW
Q114 (I-10) SW
Q118 (H-25) MONO MULTI
Q208,209 5V REG
Q213 (F-31) INV
Q214 DTC144EU INV (K-29)
Q402 (E-2) POWER ON
Q403,404 (E-2)(F-3) SW REG
Q415 INV
Q416 (J-32) SW
D206 DAP202U (K-26)
PS101 ICP-N10
PS201 ICP-N10
CL106
CN007 16P
SHIELD CASE
28
31
32
33
34
no mark : REC/PB
( ) REC mod
( ) PB mod
✻ Impossible to measure
voltage at the marked p
SV-6


15
16
17
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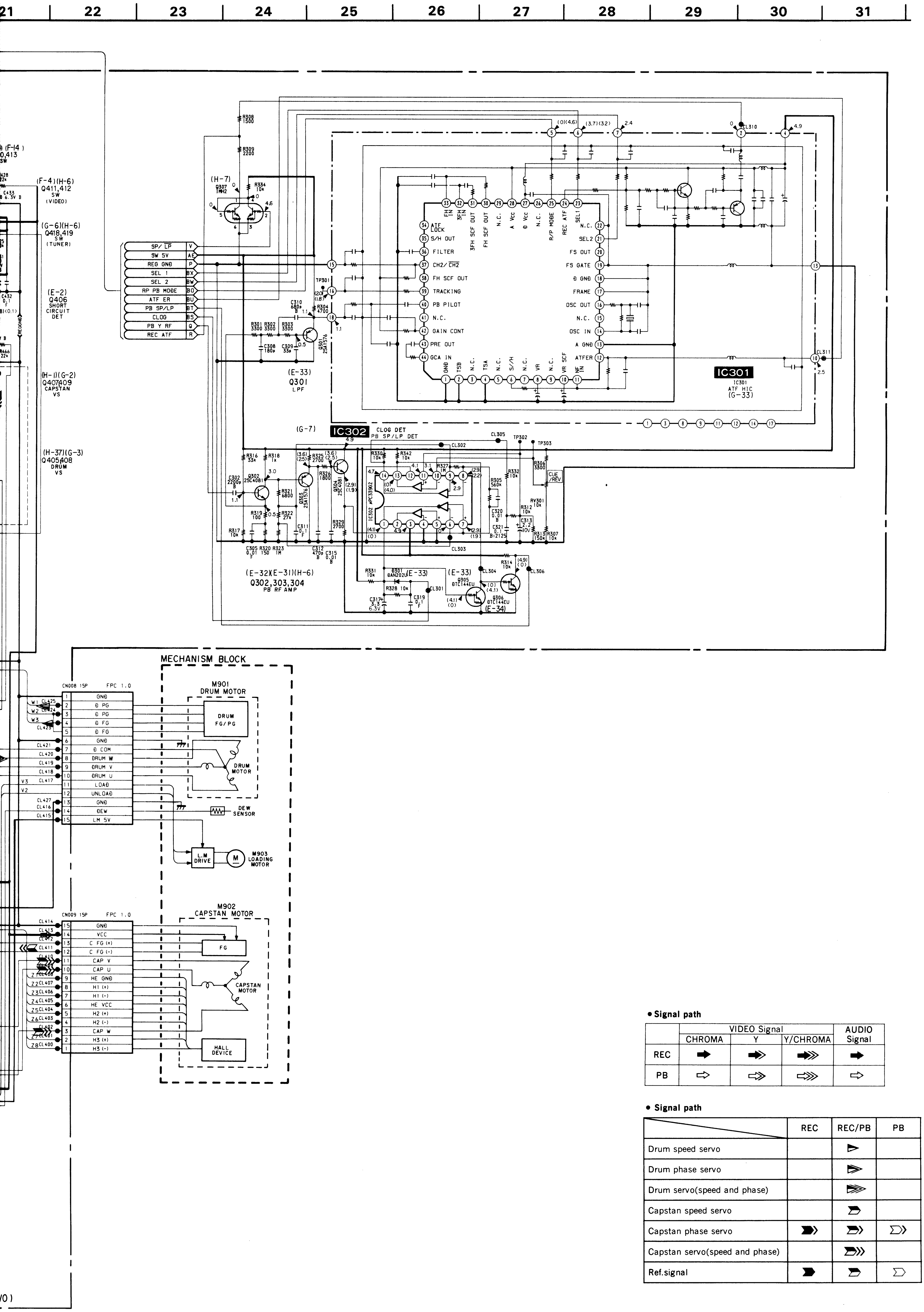
20
21
22
23
24
25
26
TO DC-22P BOARD W701 (See page 113.)
CN007 16P
UN GND
BL UNREG
BD UNREG
EVER 5V
CAM UNREG
CHARGE
SS UNREG
CHARGE START
LD UNREG
CAP UNREG
(E-2)(F-3) Q403,404 SW REG
(F-14)(F-14) Q410,413 SW
(F-4)(H-6) Q411,412 SW (VIDEO)
(G-6)(H-6) Q418,419 SW (TUNER)
(E-2) Q402 POWER ON
IC401 (F-37) SW REG CONT
(E-2) Q406 SHORT CIRCUIT DET
(H-1)(G-2) Q407,409 CAPSTAN VS
(H-37)(G-3) Q405,408 DRUM VS
SHIELD CASE
(G-38) IC402 COMPALATOR
(I-33) IC405 WAVE SHAPER
(J-32) Q416 SW
(I-32) Q415 INV
IC403 (J-34) DRUM MOTOR DRIVER
(I-35) IC404 CAPSTAN MOTOR DRIVER
(F-31) Q213 INV
SP/LP
SW 5V
REG GND
SEL 1
SEL 2
RP PB MODE
ATF ER
PB SP/LP
CLOG
PB Y RF
REC ATF
(H-7) Q307
(E-33) Q301 LPF
(G-7) IC302 CLOG DET PB SP/LP DET
(E-32)(E-31)(H-6) Q302,303,304 PB RF AMP
(E-33) Q305
ATF LOCK
S/H OUT
FILTER
CH2/CH2
FH SCF OUT
TRACKING
PB PILOT
N.C.
GAIN CONT
PRE OUT
GCA IN
MECHANISM BLOCK
CN008 15P FPC 1.0
GND
Θ PG
Θ FG
Θ COM
DRUM W
DRUM V
DRUM U
LOAD
UNLOAD
DEW
LM 5V
M901 DRUM MOTOR
DRUM FG/PG
DRUM MOTOR
DEW SENSOR
L.M DRIVE
M903 LOADING MOTOR
CN009 15P FPC 1.0
VCC
C FG (+)
C FG (-)
CAP V
CAP U
HE GND
H1 (+)
H1 (-)
HE VCC
H2 (+)
H2 (-)
CAP W
H3 (+)
H3 (-)
M902 CAPSTAN MOTOR
FG
CAPSTAN MOTOR
HALL DEVICE

no mark : REC/PB mode
( ) : REC mode
〈 〉 : PB mode
* Impossible to measure the voltage at the marked points.

SV-66 BOARD (1/2) (SYSCON·SERVO)


21
22
23
24
25
26
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28
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30
31
IC301
IC301
ATF HIC
(G-33)
IC302
CLOG DET
PB SP/LP DET
(G-7)
(E-33)
Q301
LPF
(E-32)(E-31)(H-6)
Q302,303,304
PB RF AMP
(H-7)
Q307
(F-4)(H-6)
Q411,412
SW
(VIDEO)
(G-6)(H-6)
Q418,419
SW
(TUNER)
(E-2)
Q406
SHORT
CIRCUIT
DET
(H-1)(G-2)
Q407,409
CAPSTAN
VS
(H-37)(G-3)
Q405,408
DRUM
VS
SP/LP
SW 5V
REG GND
SEL 1
SEL 2
RP PB MODE
ATF ER
PB SP/LP
CLOG
PB Y RF
REC ATF
FH IN
3FH IN
3FH SCF OUT
FH SCF OUT
N.C.
A Vcc
θ Vcc
R/P MODE
REC ATF
SEL1
ATF LOCK
S/H OUT
FILTER
CH2/CH2
FH SCF OUT
TRACKING
PB PILOT
N.C.
GAIN CONT
PRE OUT
GCA IN
GND
TSB
TSA
S/H
VR
VR SCF
NF IN
N.C.
SEL2
FS OUT
FS GATE
θ GND
FRAME
OSC OUT
OSC IN
A GND
ATFER
CUE/REV
CL302
CL303
CL304
CL305
CL306
CL310
CL311
TP301
TP302
TP303
MECHANISM BLOCK
M901
DRUM MOTOR
DRUM FG/PG
DRUM MOTOR
DEW SENSOR
L.M DRIVE
M903
LOADING MOTOR
M902
CAPSTAN MOTOR
FG
CAPSTAN MOTOR
HALL DEVICE
CN008 15P FPC 1.0
GND
θ PG
θ PG
θ FG
θ FG
GND
θ COM
DRUM W
DRUM V
DRUM U
LOAD
UNLOAD
GND
DEW
LM 5V
CN009 15P FPC 1.0
GND
VCC
C FG (+)
C FG (-)
CAP V
CAP U
HE GND
H1 (+)
H1 (-)
HE VCC
H2 (+)
H2 (-)
CAP W
H3 (+)
H3 (-)

• **Signal path**

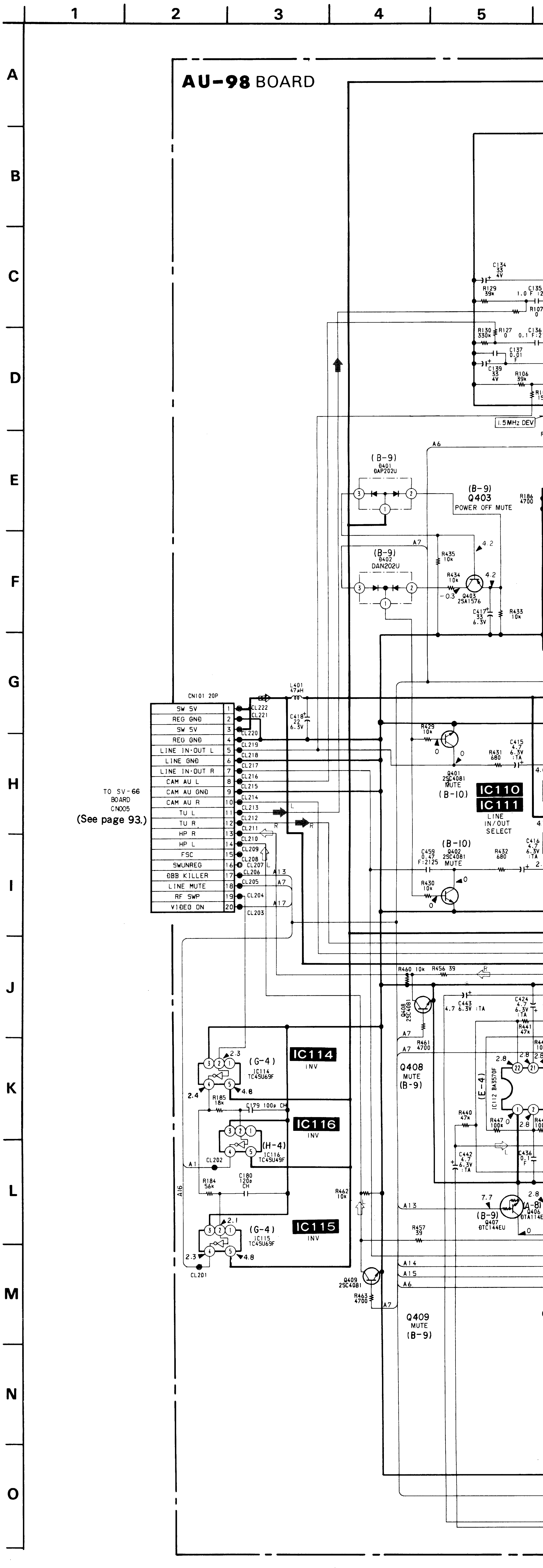
	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC	➡	➡»	➡»»	➡
PB	⇨	⇨»	⇨»»	⇨

• **Signal path**

	REC	REC/PB	PB
Drum speed servo		▷	
Drum phase servo		▷▷	
Drum servo(speed and phase)		▷▷▷	
Capstan speed servo		⊳	
Capstan phase servo	▶»	⊳»	▷»
Capstan servo(speed and phase)		⊳»»	
Ref.signal	▶	⊳	▷

AU-98 (STEREO AFM PROCESS) SCHEMATIC DIAGRAM

— Ref. No, AU-98 BOARD : 7000 series —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D
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G
H
I
J
K
L
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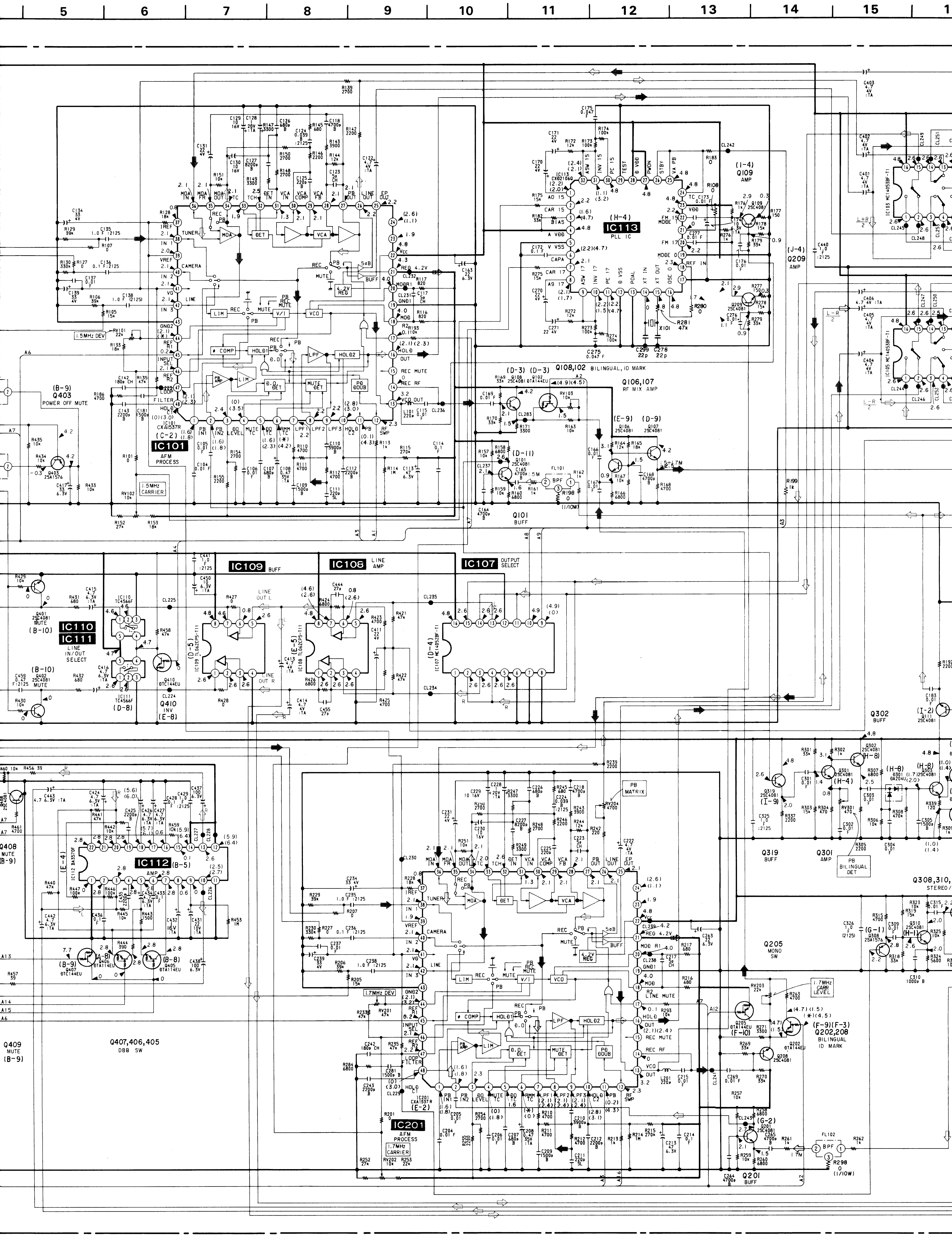
N
O
AU-98 BOARD
CN101 20P
SW 5V
REG GND
SW 5V
REG GND
LINE IN·OUT L
LINE GND
LINE IN·OUT R
CAM AU L
CAM AU GND
CAM AU R
TU L
TU R
HP R
HP L
FSC
SWUNREG
DBB KILLER
LINE MUTE
RF SWP
VIDEO ON
TO SV-66 BOARD CN005 (See page 93.)
L401 47μH
C418 22 6.3V
(B-9) Q401 DAP202U
(B-9) Q402 DAN202U
(B-9) Q403 POWER OFF MUTE
Q403 2SA1576
R435 10k
R434 10k
R433 10k
C417 33 6.3V
R186 4700
1.5MHz DEV
Q401 2SC4081 MUTE (B-10)
Q402 2SC4081 MUTE
(B-10)
IC110
IC111
LINE IN/OUT SELECT
R429 10k
R430 10k
R431 680
R432 680
C415 4.7 6.3V :TA
C416 4.7 6.3V :TA
C459 0.47 F:2125
R460 10k
R456 39
Q408 2SC4081
C443 4.7 6.3V :TA
C424 4.7 6.3V :TA
R441 47k
R461 4700
Q408 MUTE (B-9)
IC112 BA3570F
(E-4)
R440 47k
R447 100k
C442 4.7 6.3V :TA
C436 0.1 F
(B-9) Q407 DTC144EU
Q406 DTA114EU
R457 39
R462 10k
Q409 2SC4081
R463 4700
Q409 MUTE (B-9)
IC114 INV
(G-4) IC114 TC4SU69F
IC116 INV
(H-4) IC116 TC4SU69F
IC115 INV
(G-4) IC115 TC4SU69F
R185 18k
C179 100p CH
R184 56k
C180 120p CH
C134 33 4V
R129 39k
C135 1.0 F
R107 0
R130 330k
R127 0
C136 0.1 F
C137 0.01 F
C139 33 4V
R106 39k



5
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12
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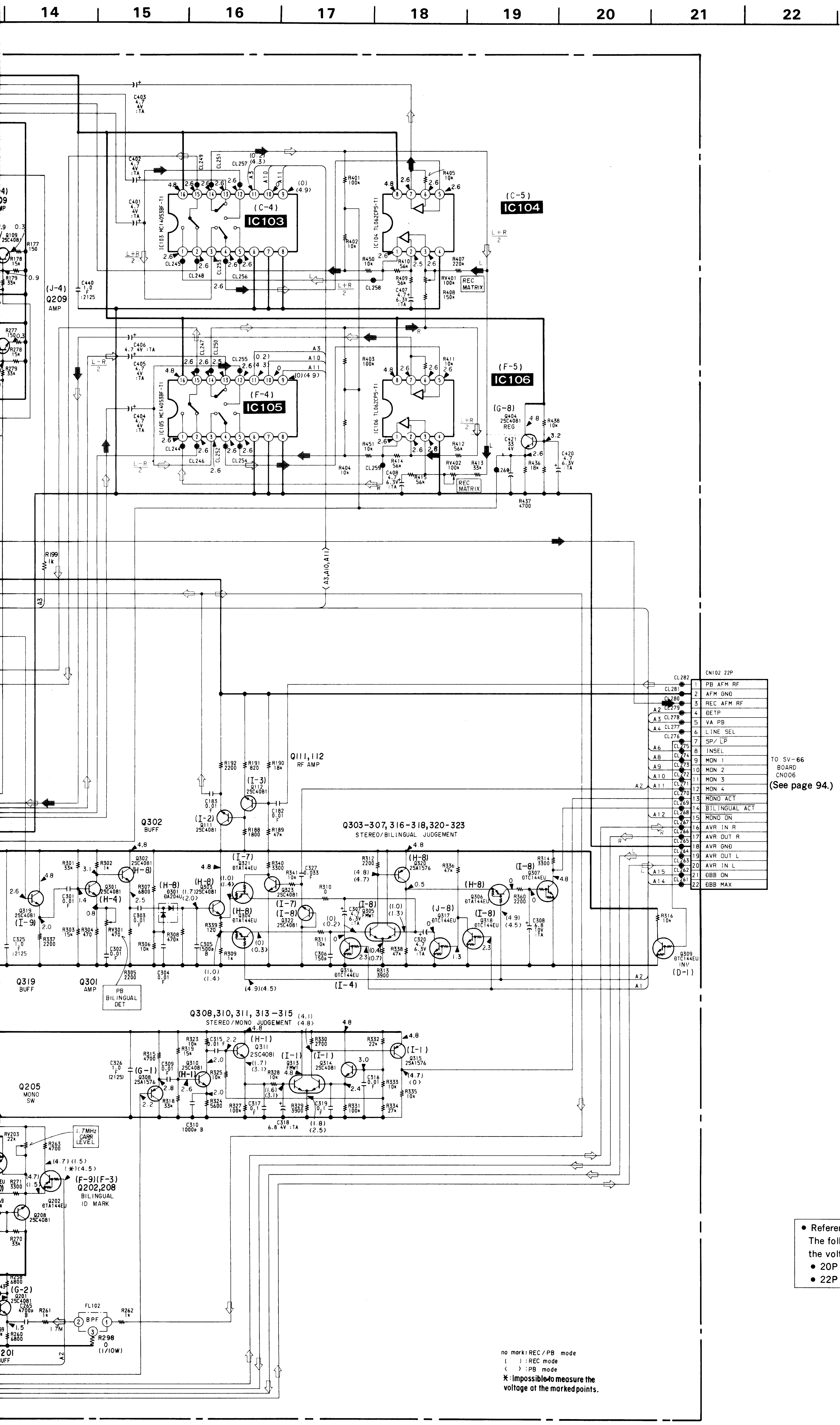
14
15
IC101
CXA1537R
(C-2)
AFM PROCESS
1.5MHz DEV
1.5MHz CARRIER
TUNER
CAMERA
LINE
MOA
DET
VCA
PB
BUFF
LIM
REC
MUTE
V/I
VCO
COMP
HOLD1
HOLD2
LPF
REG 4.2V
4.2V REG
IC113
CX621060
(H-4)
PLL IC
X101
(I-4)
Q109
AMP
(J-4)
Q209
AMP
(D-3) (D-3)
Q108,102
BILINGUAL, ID MARK
Q106,107
RF MIX AMP
(E-9) (D-9)
(D-11)
Q101
BUFF
FL101
BPF
(B-9)
Q403
POWER OFF MUTE
IC109
BUFF
IC108
LINE AMP
IC107
OUTPUT SELECT
LINE OUT L
LINE OUT R
(D-5)
(E-5)
(D-4)
IC110
IC111
LINE IN/OUT SELECT
(B-10)
Q401
MUTE
Q402
MUTE
Q410
INV
(E-8)
(D-8)
IC112
BA3570F
(E-4)
(B-5)
AMP
Q408
MUTE
(B-9)
(A-8)
(B-8)
Q407
Q406
Q405
Q409
MUTE
(B-9)
Q407,406,405
DBB SW
IC201
CXA1537R
(E-2)
AFM PROCESS
1.7MHz DEV
1.7MHz CARRIER
PB MATRIX
Q205
MONO SW
1.7MHz CARR LEVEL
(F-10)
Q205
(F-9)(F-3)
Q202,208
BILINGUAL ID MARK
(G-2)
Q201
BUFF
FL102
BPF
Q302
BUFF
(I-2)
Q319
BUFF
(I-9)
Q301
AMP
(H-4)
(H-8)
PB BILINGUAL DET
Q308,310,
STEREO
(G-1)
(H-1)
L+R
L-R
IC105
MC14053BF-T1


14
15
16
17
18
19
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21
22
(C-4)
IC103
IC103 MC14053BF-T1
(C-5)
IC104
IC104 TL062CPS-T1
(F-4)
IC105
IC105 MC14053BF-T1
(F-5)
IC106
IC106 TL062CPS-T1
REC MATRIX
L+R/2
L-R/2
(G-8) Q404 2SC4081 REG
(J-4) Q209 AMP
Q111,112 RF AMP
Q302 BUFF
Q303-307,316-318,320-323 STEREO/BILINGUAL JUDGEMENT
Q319 BUFF
Q301 AMP
PB BILINGUAL DET
Q309 DTC144EU INV (D-1)
Q308,310,311,313-315 STEREO/MONO JUDGEMENT
Q205 MONO SW
1.7MHz CARR LEVEL
(F-9)(F-3) Q202,208 BILINGUAL ID MARK
FL102 BPF
201 BUFF
CN102 22P
1 PB AFM RF
2 AFM GND
3 REC AFM RF
4 DETP
5 VA PB
6 LINE SEL
7 SP/LP
8 INSEL
9 MON 1
10 MON 2
11 MON 3
12 MON 4
13 MONO ACT
14 BILINGUAL ACT
15 MONO ON
16 AVR IN R
17 AVR OUT R
18 AVR GND
19 AVR OUT L
20 AVR IN L
21 DBB ON
22 DBB MAX
TO SV-66 BOARD CN006
(See page 94.)

no mark: REC/PB mode
( ) : REC mode
〈 〉 : PB mode
✱: Impossible to measure the voltage at the marked points.

- Reference voltage value
  The following two types of extension harnes are required to measu the voltage of the AU-98 board
  - 20P extension harness (J-6082-111-A)
  - 22P extension harness (J-6082-112-A)

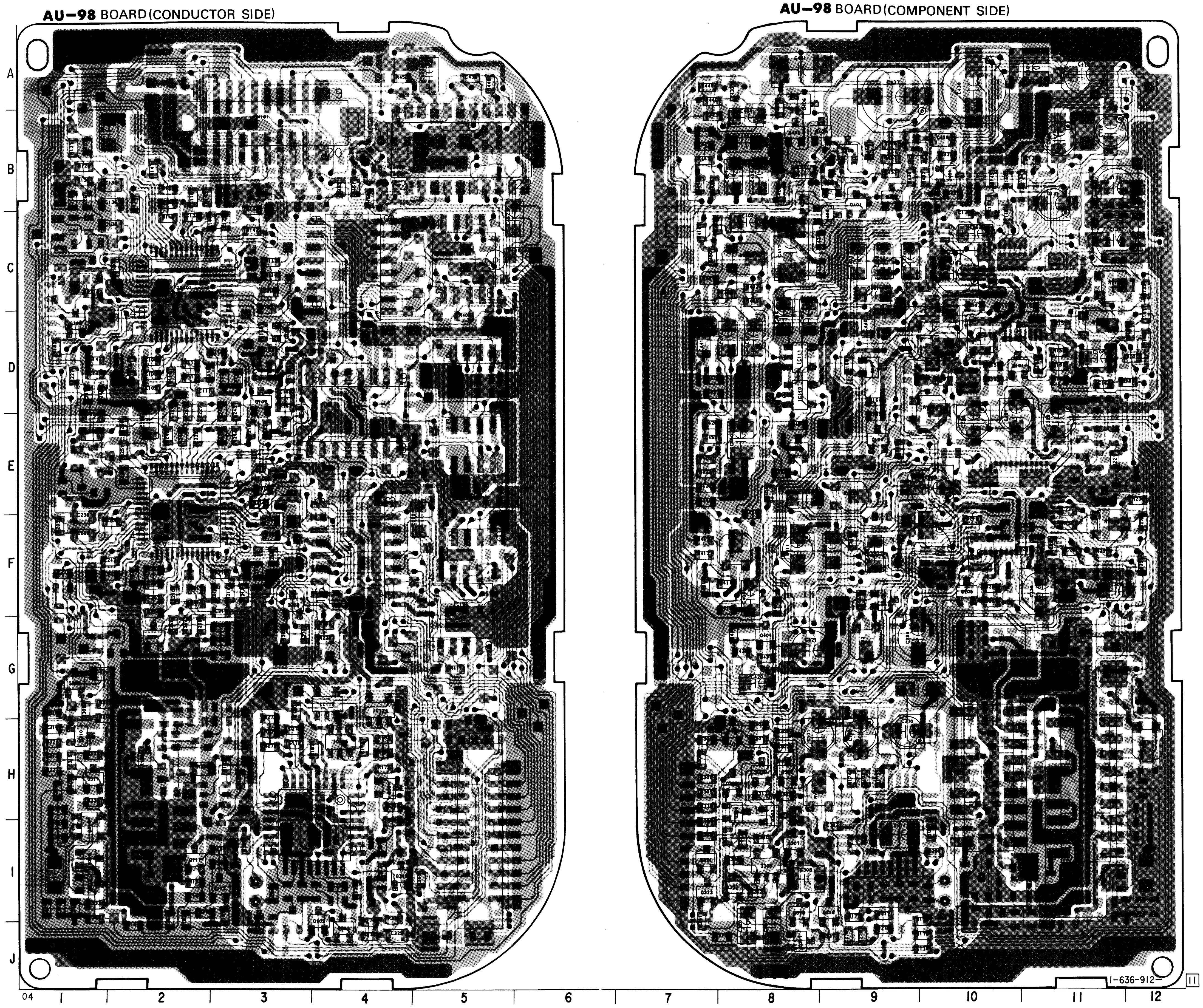
• Signal path

	AUDIO Signal
REC	➡
PB	⇨

AUDIO AUDIO

AU-98 (STEREO AFM PROCESS) PRINTED WIRING BOARD

— Ref. No, AU-98 BOARD : 7000 series —



AU—98 BOARD (CONDUCTOR SIDE)

AU—98 BOARD (COMPONENT SIDE)

DIODE

D301	8-719-941-23	DIODE DA204U
D401	8-719-941-09	DIODE DAP202U
D402	8-719-941-86	DIODE DAN202U

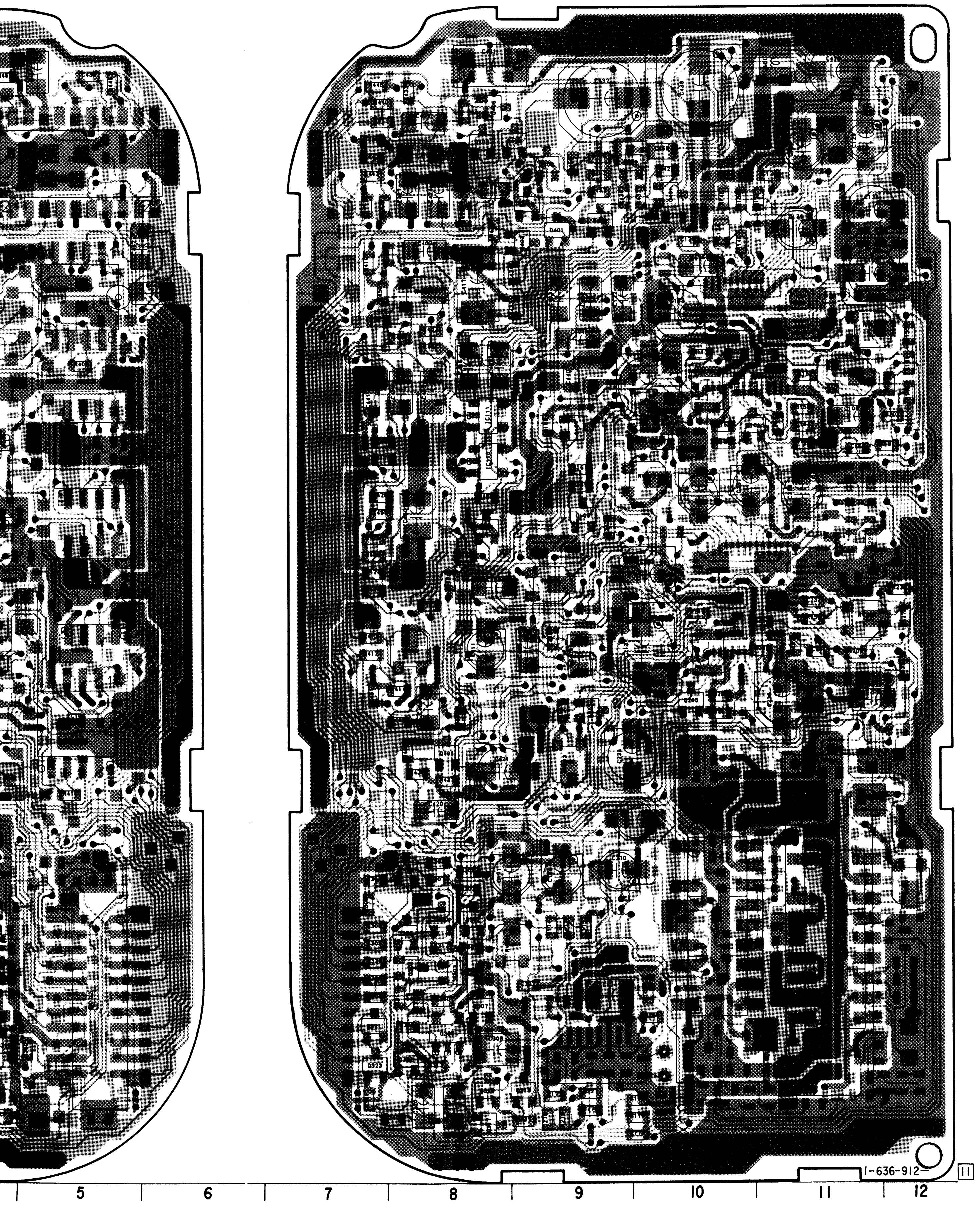
IC

IC101	8-752-053-04	IC CXA1537R
IC103	8-759-009-07	IC MC14053BF
IC104	8-759-030-16	IC MC34182M
IC105	8-759-009-07	IC MC14053BF
IC106	8-759-030-16	IC MC34182M
IC107	8-759-009-06	IC MC14052BF
IC108	8-759-030-16	IC MC34182M
IC109	8-759-030-16	IC MC34182M
IC110	8-759-234-77	IC TC4S66F
IC111	8-759-234-77	IC TC4S66F
IC112	8-759-991-27	IC BA3570F
IC113	8-752-334-42	IC CXD2106Q
IC114	8-759-209-15	IC TC4SU69F
IC115	8-759-209-15	IC TC4SU69F
IC116	8-759-209-15	IC TC4SU69F
IC201	8-752-053-04	IC CXA1537R

TRANSISTOR

Q101	8-729-905-35	TRANSISTOR 2SC4081R
Q102	8-729-905-12	TRANSISTOR DTA144EU
Q106	8-729-905-35	TRANSISTOR 2SC4081R
Q107	8-729-905-35	TRANSISTOR 2SC4081R
Q108	8-729-905-35	TRANSISTOR 2SC4081R
Q109	8-729-905-35	TRANSISTOR 2SC4081R
Q111	8-729-905-35	TRANSISTOR 2SC4081R
Q112	8-729-905-35	TRANSISTOR 2SC4081R
Q201	8-729-905-35	TRANSISTOR 2SC4081R
Q202	8-729-905-12	TRANSISTOR DTA144EU
Q205	8-729-905-12	TRANSISTOR DTA144EU
Q208	8-729-905-35	TRANSISTOR 2SC4081R
Q209	8-729-905-35	TRANSISTOR 2SC4081R
Q301	8-729-905-35	TRANSISTOR 2SC4081R
Q302	8-729-905-35	TRANSISTOR 2SC4081R
Q303	8-729-905-35	TRANSISTOR 2SC4081R
Q304	8-729-905-12	TRANSISTOR DTA144EU
Q305	8-729-903-10	TRANSISTOR FMW1
Q306	8-729-905-12	TRANSISTOR DTA144EU
Q307	8-729-905-18	TRANSISTOR DTC144EU
Q308	8-729-905-23	TRANSISTOR 2SA1576R
Q309	8-729-905-18	TRANSISTOR DTC144EU
Q310	8-729-905-35	TRANSISTOR 2SC4081R
Q311	8-729-905-35	TRANSISTOR 2SC4081R
Q313	8-729-903-10	TRANSISTOR FMW1
Q314	8-729-905-35	TRANSISTOR 2SC4081R
Q315	8-729-905-23	TRANSISTOR 2SA1576R
Q316	8-729-905-18	TRANSISTOR DTC144EU
Q317	8-729-905-18	TRANSISTOR DTC144EU
Q318	8-729-905-18	TRANSISTOR DTC144EU
Q319	8-729-905-35	TRANSISTOR 2SC4081R
Q320	8-729-905-23	TRANSISTOR 2SA1576R
Q321	8-729-905-12	TRANSISTOR DTA144EU
Q322	8-729-905-35	TRANSISTOR 2SC4081R
Q323	8-729-905-35	TRANSISTOR 2SC4081R
Q401	8-729-905-35	TRANSISTOR 2SC4081R
Q402	8-729-905-35	TRANSISTOR 2SC4081R
Q403	8-729-905-23	TRANSISTOR 2SA1576R
Q404	8-729-905-35	TRANSISTOR 2SC4081R
Q405	8-729-920-XX	TRANSISTOR DTA114EU
Q406	8-729-920-XX	TRANSISTOR DTA114EU
Q407	8-729-905-18	TRANSISTOR DTC144EU
Q408	8-729-905-35	TRANSISTOR 2SC4081R
Q409	8-729-905-35	TRANSISTOR 2SC4081R
Q410	8-729-905-18	TRANSISTOR DTC144EU

AU-98 BOARD (COMPONENT SIDE)



DIODE

D301	8-719-941-23	DIODE DA204U
D401	8-719-941-09	DIODE DAP202U
D402	8-719-941-86	DIODE DAN202U

IC

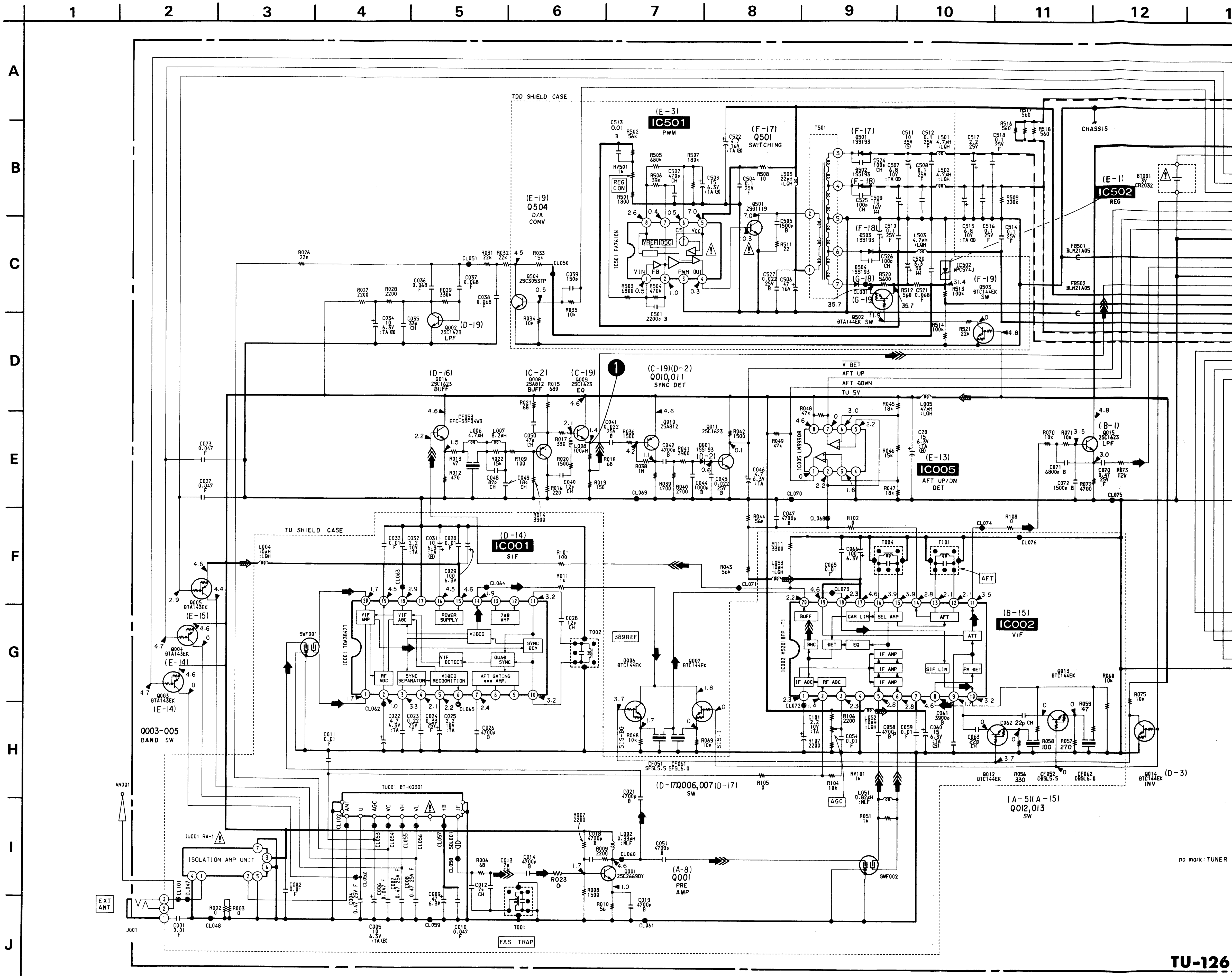
IC101	8-752-053-04	IC CXA1537R
IC103	8-759-009-07	IC MC14053BF
IC104	8-759-030-16	IC MC34182M
IC105	8-759-009-07	IC MC14053BF
IC106	8-759-030-16	IC MC34182M
IC107	8-759-009-06	IC MC14052BF
IC108	8-759-030-16	IC MC34182M
IC109	8-759-030-16	IC MC34182M
IC110	8-759-234-77	IC TC4S66F
IC111	8-759-234-77	IC TC4S66F
IC112	8-759-991-27	IC BA3570F
IC113	8-752-334-42	IC CXD2106Q
IC114	8-759-209-15	IC TC4SU69F
IC115	8-759-209-15	IC TC4SU69F
IC116	8-759-209-15	IC TC4SU69F
IC201	8-752-053-04	IC CXA1537R

TRANSISTOR

Q101	8-729-905-35	TRANSISTOR 2SC4081R
Q102	8-729-905-12	TRANSISTOR DTA144EU
Q106	8-729-905-35	TRANSISTOR 2SC4081R
Q107	8-729-905-35	TRANSISTOR 2SC4081R
Q108	8-729-905-35	TRANSISTOR 2SC4081R
Q109	8-729-905-35	TRANSISTOR 2SC4081R
Q111	8-729-905-35	TRANSISTOR 2SC4081R
Q112	8-729-905-35	TRANSISTOR 2SC4081R
Q201	8-729-905-35	TRANSISTOR 2SC4081R
Q202	8-729-905-12	TRANSISTOR DTA144EU
Q205	8-729-905-12	TRANSISTOR DTA144EU
Q208	8-729-905-35	TRANSISTOR 2SC4081R
Q209	8-729-905-35	TRANSISTOR 2SC4081R
Q301	8-729-905-35	TRANSISTOR 2SC4081R
Q302	8-729-905-35	TRANSISTOR 2SC4081R
Q303	8-729-905-35	TRANSISTOR 2SC4081R
Q304	8-729-905-12	TRANSISTOR DTA144EU
Q305	8-729-903-10	TRANSISTOR FMW1
Q306	8-729-905-12	TRANSISTOR DTA144EU
Q307	8-729-905-18	TRANSISTOR DTC144EU
Q308	8-729-905-23	TRANSISTOR 2SA1576R
Q309	8-729-905-18	TRANSISTOR DTC144EU
Q310	8-729-905-35	TRANSISTOR 2SC4081R
Q311	8-729-905-35	TRANSISTOR 2SC4081R
Q313	8-729-903-10	TRANSISTOR FMW1
Q314	8-729-905-35	TRANSISTOR 2SC4081R
Q315	8-729-905-23	TRANSISTOR 2SA1576R
Q316	8-729-905-18	TRANSISTOR DTC144EU
Q317	8-729-905-18	TRANSISTOR DTC144EU
Q318	8-729-905-18	TRANSISTOR DTC144EU
Q319	8-729-905-35	TRANSISTOR 2SC4081R
Q320	8-729-905-23	TRANSISTOR 2SA1576R
Q321	8-729-905-12	TRANSISTOR DTA144EU
Q322	8-729-905-35	TRANSISTOR 2SC4081R
Q323	8-729-905-35	TRANSISTOR 2SC4081R
Q401	8-729-905-35	TRANSISTOR 2SC4081R
Q402	8-729-905-35	TRANSISTOR 2SC4081R
Q403	8-729-905-23	TRANSISTOR 2SA1576R
Q404	8-729-905-35	TRANSISTOR 2SC4081R
Q405	8-729-920-XX	TRANSISTOR DTA114EU
Q406	8-729-920-XX	TRANSISTOR DTA114EU
Q407	8-729-905-18	TRANSISTOR DTC144EU
Q408	8-729-905-35	TRANSISTOR 2SC4081R
Q409	8-729-905-35	TRANSISTOR 2SC4081R
Q410	8-729-905-18	TRANSISTOR DTC144EU

SB-3P (FUNCTION SW), TU-126 (TUNER, VIF, SIF, DC/DC CONVERTER) SCHEMATIC DIAGRAM

— Ref. No, SB-3P and TU-126 BOARDS : 6000 series —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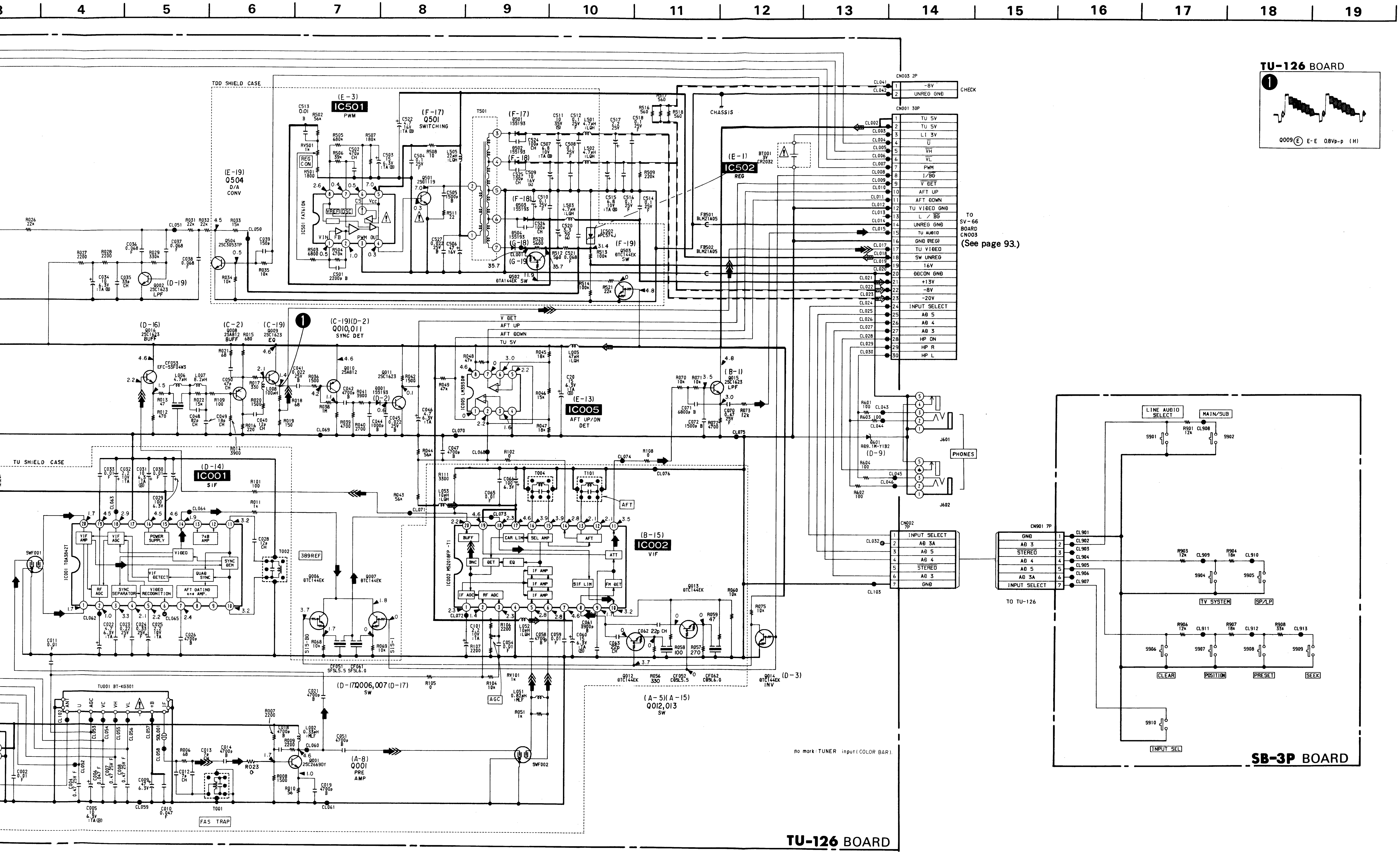
A
B
C
D
E
F
G
H
I
J
TDD SHIELD CASE
(E-3)
IC501
PWM
(F-17)
Q501
SWITCHING
T501
(F-17)
Q501
1SS193
(F-18)
Q503
1SS193
(G-18)
(G-19)
Q502
DTA144EK SW
IC502
µPC574J
(F-19)
Q503
DTC144EK
SW
CHASSIS
(E-1)
IC502
REG
BT001
3V
CR2032
FB501
BLM21A05
FB502
BLM21A05
(E-19)
Q504
D/A
CONV
Q504
2SC3053TP
(D-19)
Q002
2SC1623
LPF
(D-16)
Q016
2SC1623
BUFF
(C-2)
Q008
2SA812
BUFF
(C-19)
Q009
2SC1623
EQ
(C-19)(D-2)
Q010,011
SYNC DET
Q010
2SA812
Q011
2SC1623
V GET
AFT UP
AFT DOWN
TU 5V
IC005 LM393DR
(E-13)
IC005
AFT UP/DN
DET
(B-1)
Q015
2SC1623
LPF
TU SHIELD CASE
(D-14)
IC001
SIF
IC001 TDA3842T
VIF AMP
VIF AGC
POWER SUPPLY
7dB AMP
VIDEO
VIF DETECT
QUAD SYNC
SYNC DEM
RF AGC
SYNC SEPARATOR
VIDEO RECOGNITION
AFT GATING and AMP.
T002
389REF
Q006
DTC144EK
Q007
DTC144EK
SIS-BG
SIS-I
CF051
SFSL5.5
CF061
SFSL6.0
(D-17)Q006,007(D-17)
SW
IC002 M52018FP-T1
(B-15)
IC002
VIF
BUFF
CAR LIM
SEL AMP
AFT
ATT
BNC
DET
EQ
IF AMP
IF AGC
RF AGC
SIF LIM
FM DET
T004
T101
AFT
AGC
Q013
DTC144EK
Q012
DTC144EK
(A-5)(A-15)
Q012,013
SW
Q014
DTC144EK
(D-3)
INV
Q005
DTA143EK
(E-15)
Q004
DTA143EK
(E-14)
Q003
DTA143EK
(E-14)
Q003-005
BAND SW
AN001
IU001 RA-1
ISOLATION AMP UNIT
TU001 BT-KG301
ANT
U
AGC
VC
VH
VL
+B
IF
EXT ANT
J001
SWF001
SWF002
(A-8)
Q001
PRE
AMP
Q001
2SC2669OY
T001
FAS TRAP
no mark: TUNER
TU-126

• Signal path

	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC			➡≫	➡


TU-126 BOARD
Q009(E) E-E 0.8Vp-p (H)
TOD SHIELD CASE
(E-3) IC501 PWM
(F-17) Q501 SWITCHING
T501
(E-19) Q504 D/A CONV
(E-1) IC502 REG
CHASSIS
CHECK
CN003 2P
-8V
UNREG GND
CN001 30P
TU 5V
TU 5V
LI 3V
U
VH
VL
PWM
I/BG
V DET
AFT UP
AFT DOWN
TU VIDEO GND
L / BG
UNREG GND
TU AUDIO
GND (REG)
TU VIDEO
SW UNREG
16V
DDCON GND
+13V
-8V
-20V
INPUT SELECT
AB 5
AB 4
AB 3
HP ON
HP R
HP L
TO SV-66 BOARD CN003
(See page 93.)
(D-16) Q016 2SC1623 BUFF
(C-2) Q008 2SA812 BUFF
(C-19) Q009 2SC1623 EQ
(C-19)(D-2) Q010,011 SYNC DET
(E-13) IC005 AFT UP/DN DET
(B-1) Q015 2SC1623 LPF
TU SHIELD CASE
(D-14) IC001 SIF
389REF
Q006 BTC144EK
Q007 BTC144EK
(B-15) IC002 VIF
AFT
Q013 BTC144EK
Q012 BTC144EK
(A-5)(A-15) Q012,013 SW
Q014 BTC144EK INV (D-3)
(D-17)Q006,007(D-17) SW
AGC
TU001 BT-KG301
(A-8) Q001 PRE AMP
SWF002
FAS TRAP
T001
no mark: TUNER input (COLOR BAR)
J601
J602
PHONES
(D-9)
CN002 7P
INPUT SELECT
AB 3A
AB 5
AB 4
STEREO
AB 3
GND
CN901 7P
GND
AB 3
STEREO
AB 4
AB 5
AB 3A
INPUT SELECT
TO TU-126
LINE AUDIO SELECT
MAIN/SUB
TV SYSTEM
SP/LP
CLEAR
POSITION
PRESET
SEEK
INPUT SEL
SB-3P BOARD

TUNER, POWER TUNER, POWER

SB-3P (FUNCTION SW), TU-126 (TUNER, VIF, SIF, DC/DC CONVERTER) PRINTED WIRING BOARDS

— Ref. No, SB-3P and TU-126 BOARDS : 6000 series —

DIODE

D001	8-719-801-50	DIODE MA152WK
D501	8-719-801-50	DIODE MA152WK
D502	8-719-801-50	DIODE MA152WK
D503	8-719-801-50	DIODE MA152WK
D504	8-719-801-50	DIODE MA152WK
D601	8-719-106-44	DIODE RD9.1M-B2

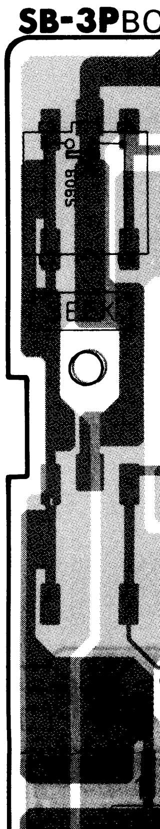
IC

IC001	8-759-504-59	IC TDA3842T-T
IC002	8-759-634-94	IC M52018FP
IC005	8-759-998-92	IC LM393D
IC501	8-759-500-70	IC FA7610N
IC502	8-759-157-40	IC UPC574J

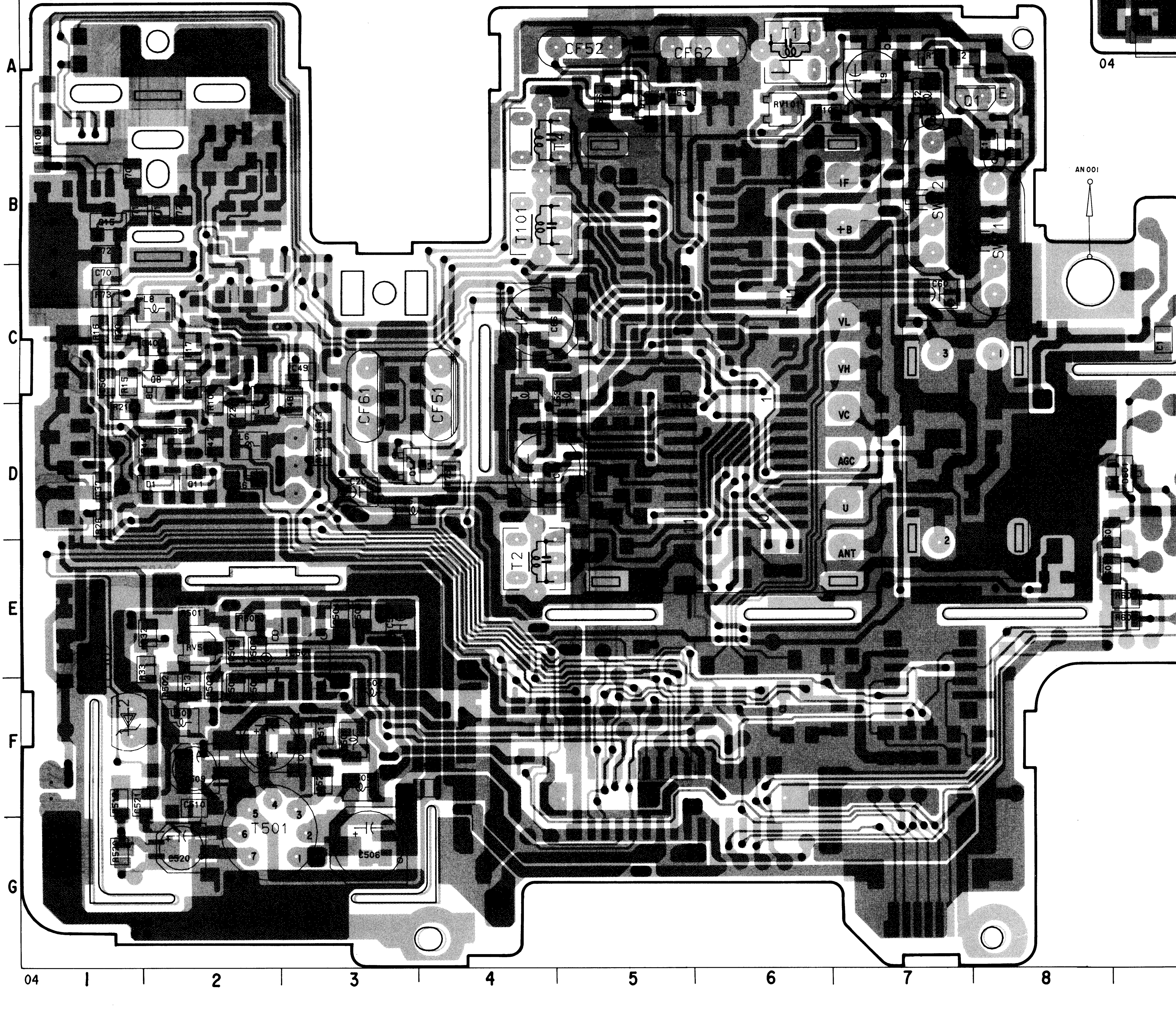
TRANSISTOR

Q001	8-729-230-XX	TRANSISTOR 2SC26690Y
Q002	8-729-100-66	TRANSISTOR 2SC1623
Q003	8-729-901-47	TRANSISTOR DTA143EK
Q004	8-729-901-47	TRANSISTOR DTA143EK
Q005	8-729-901-47	TRANSISTOR DTA143EK
Q006	8-729-901-01	TRANSISTOR DTC144EK
Q007	8-729-901-01	TRANSISTOR DTC144EK
Q008	8-729-216-22	TRANSISTOR 2SA1162
Q009	8-729-100-66	TRANSISTOR 2SC1623
Q010	8-729-216-22	TRANSISTOR 2SA1162
Q011	8-729-100-66	TRANSISTOR 2SC1623
Q012	8-729-901-01	TRANSISTOR DTC144EK
Q013	8-729-901-01	TRANSISTOR DTC144EK
Q014	8-729-901-01	TRANSISTOR DTC144EK
Q015	8-729-100-66	TRANSISTOR 2SC1623
Q016	8-729-100-66	TRANSISTOR 2SC1623
Q501	8-729-421-15	TRANSISTOR 2SD1119-Q
Q502	8-729-901-06	TRANSISTOR DTA144EK
Q503	8-729-901-01	TRANSISTOR DTC144EK
Q504	8-729-601-58	TRANSISTOR 2SC3053-C

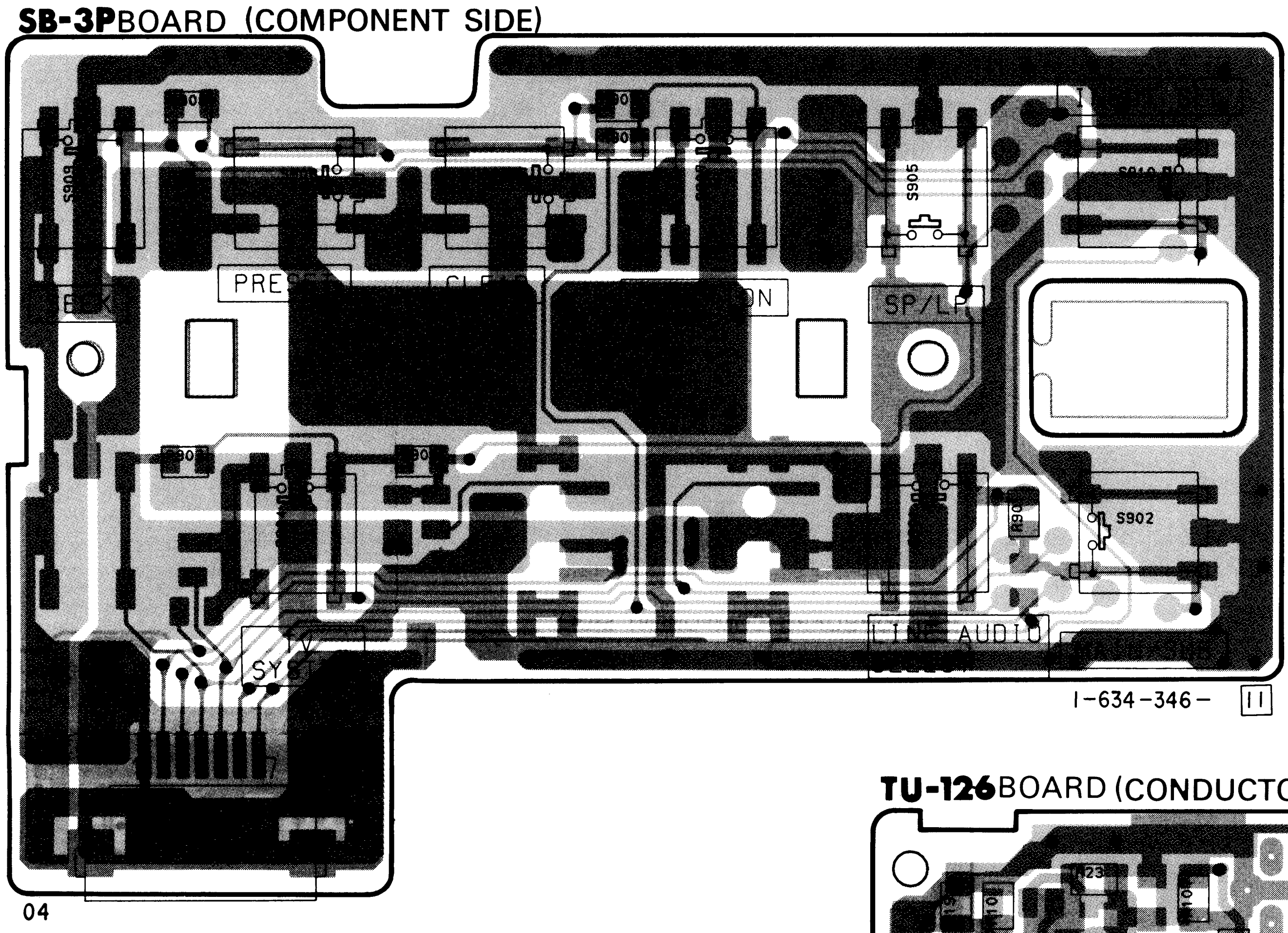
SB-3PB

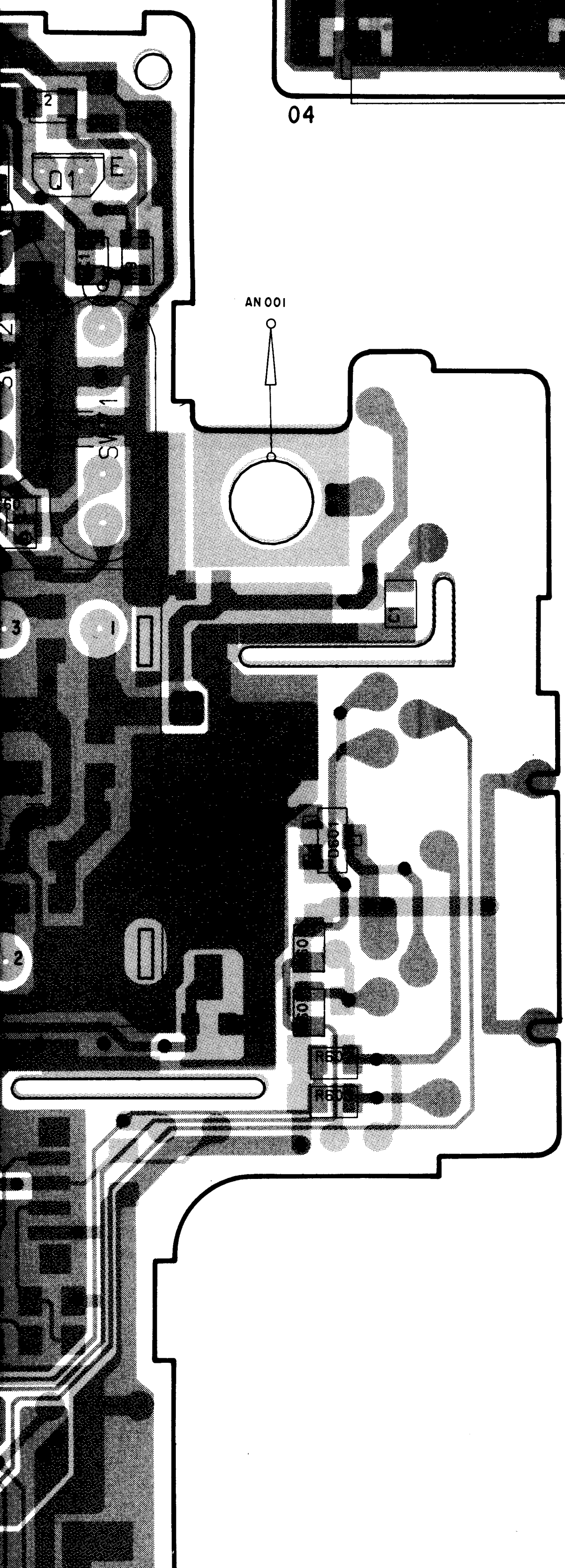


TU-126 BOARD (COMPONENT SIDE)

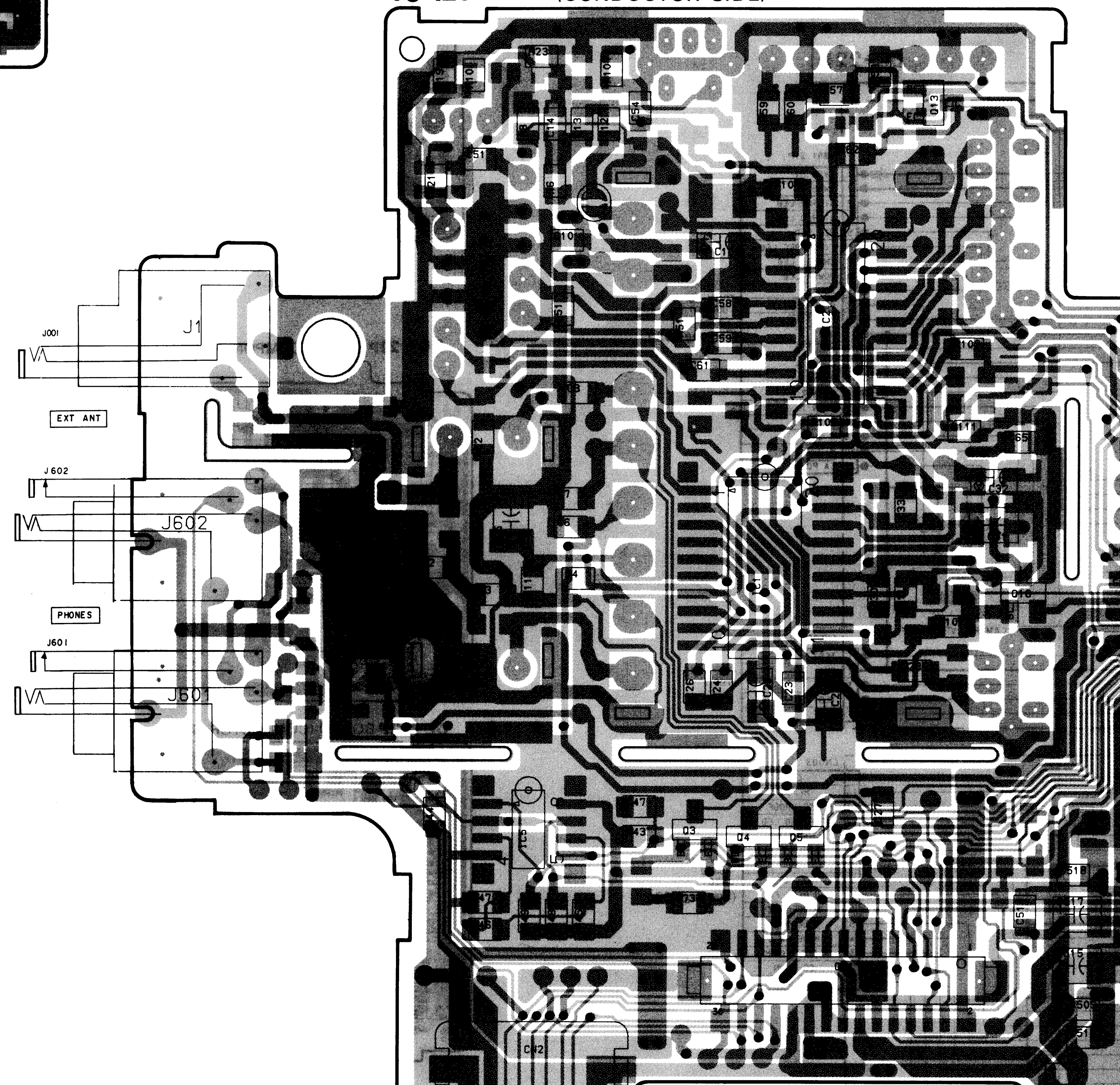


SB-3P BOARD (COMPONENT SIDE)

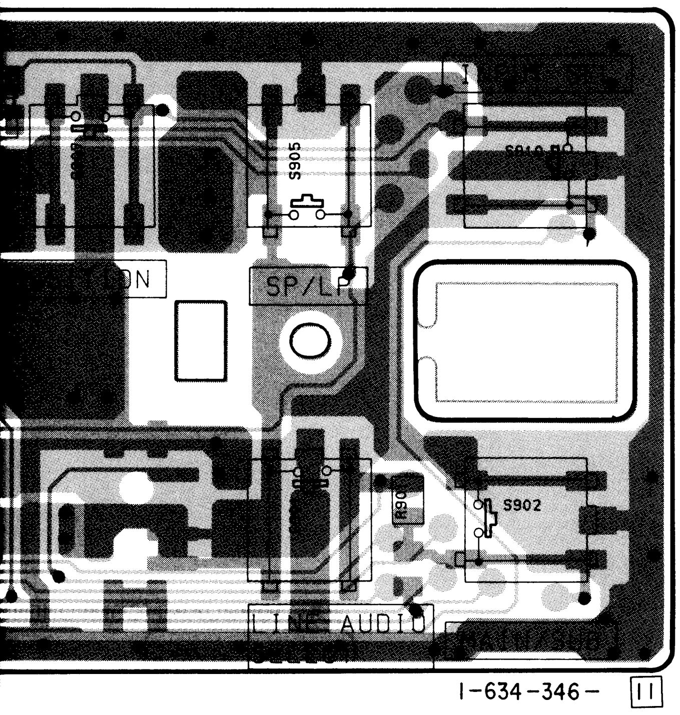

S909
PRESET
SP/LP
S905
S910
S902
SYS
LINE AUDIO
1-634-346- 11
04



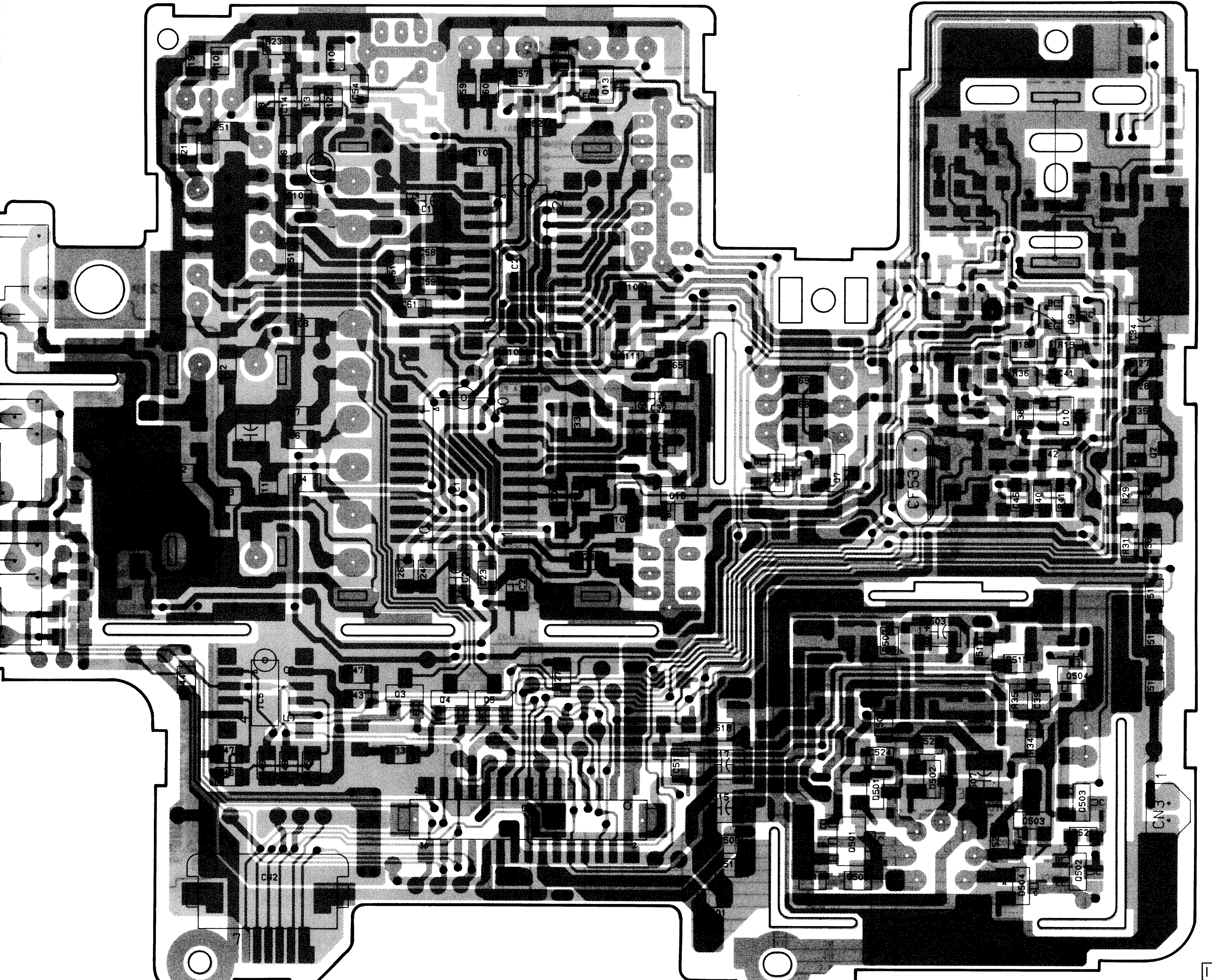
TU-126 BOARD (CONDUCTOR SIDE)


J001
J1
EXT ANT
J602
J602
PHONES
J601
J601
CN2

8 9 10 11 12 13 14 15 16


S905
SP/LP
S902
LINE AUDIO
1-634-346- 11

TU-126 BOARD (CONDUCTOR SIDE)


CN2
CN3
CF503
D501
D502
D503
D504
Q502
Q504
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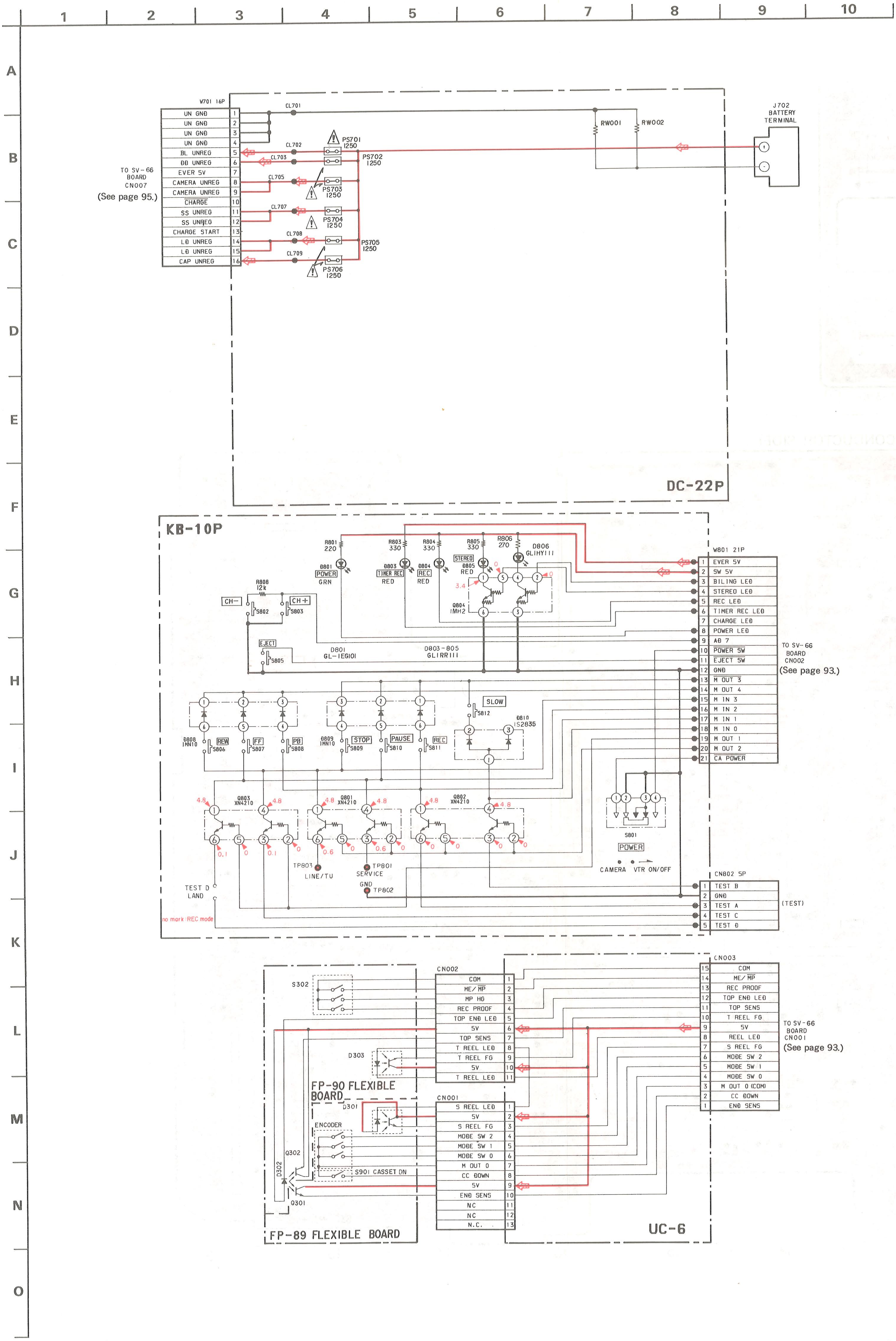
DC-22P (BATT IN), KB-10P (FUNCTION SW), UC-6 (MD RELAY) PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAM

— Ref. No, DC-22P, KB-10P and UC-6 BOARDS : 4000 series —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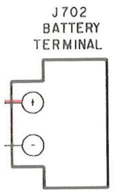
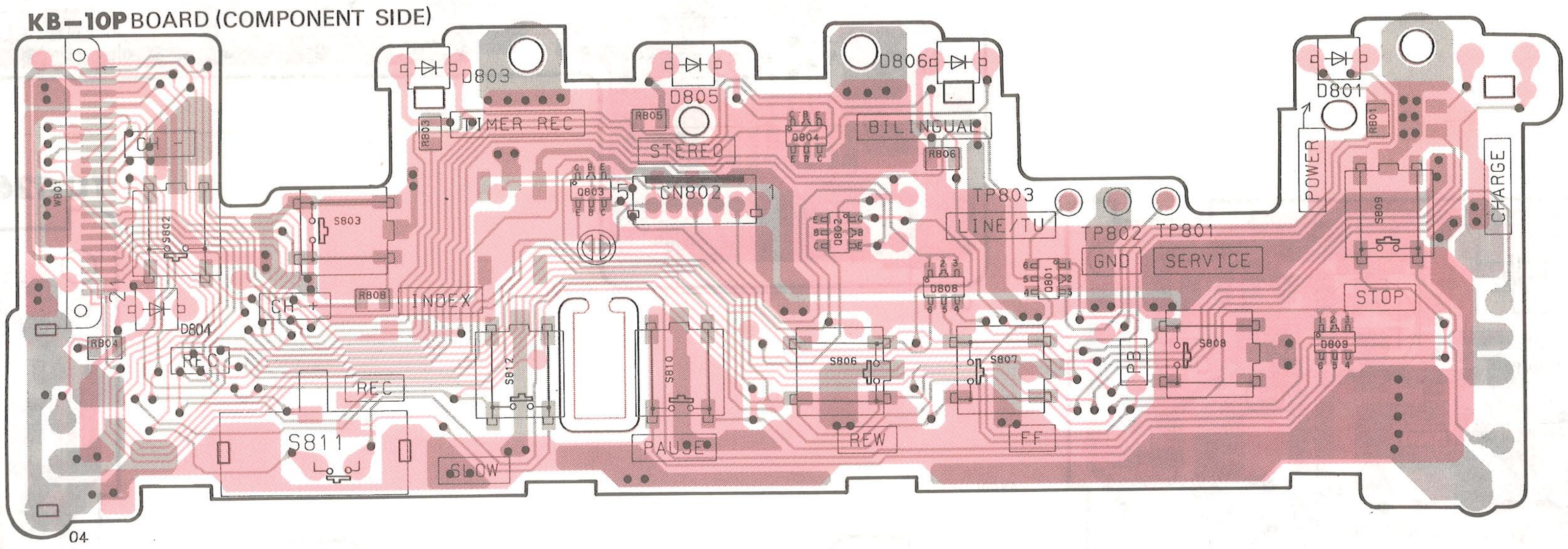
J
K
L
M
N
O
W701 16P
UN GND
UN GND
UN GND
UN GND
BL UNREG
DD UNREG
EVER 5V
CAMERA UNREG
CAMERA UNREG
CHARGE
SS UNREG
SS UNREG
CHARGE START
LD UNREG
LD UNREG
CAP UNREG
TO SV-66 BOARD CN007
(See page 95.)
CL701
CL702
CL703
CL705
CL707
CL708
CL709
PS701 1250
PS702 1250
PS703 1250
PS704 1250
PS705 1250
PS706 1250
RW001
RW002
J702 BATTERY TERMINAL
DC-22P
KB-10P
R801 220
R803 330
R804 330
R805 330
R806 270
D801 POWER GRN
D803 TIMER REC RED
D804 REC RED
STEREO D805 RED
D806 GL1HY111
Q804 IMH2
R808 12k
CH−
CH+
S802
S803
EJECT
S805
D801 GL-1EG101
D803-805 GL1RR111
W801 21P
EVER 5V
SW 5V
BILING LED
STEREO LED
REC LED
TIMER REC LED
CHARGE LED
POWER LED
AD 7
POWER SW
EJECT SW
GND
M OUT 3
M OUT 4
M IN 3
M IN 2
M IN 1
M IN 0
M OUT 1
M OUT 2
CA POWER
TO SV-66 BOARD CN002
(See page 93.)
SLOW
S812
D810 1S2835
D808 IMN10
REW S806
FF S807
PB S808
D809 IMN10
STOP S809
PAUSE S810
REC S811
Q803 XN4210
Q801 XN4210
Q802 XN4210
4.8
0.1
0
0.6
3.4
TP803 LINE/TU
TP801 SERVICE
GND TP802
TEST D LAND
no mark : REC mode
S801
POWER
CAMERA VTR ON/OFF
CN802 5P
TEST B
GND
TEST A
TEST C
TEST D
(TEST)
S302
CN002
COM
ME/MP
MP HG
REC PROOF
TOP END LED
5V
TOP SENS
T REEL LED
T REEL FG
5V
T REEL LED
D303
FP-90 FLEXIBLE BOARD
D301
CN001
S REEL LED
5V
S REEL FG
MODE SW 2
MODE SW 1
MODE SW 0
M OUT 0
CC DOWN
5V
END SENS
NC
NC
N.C.
ENCODER
Q302
D302
Q301
S901 CASSET DN
FP-89 FLEXIBLE BOARD
UC-6
CN003
COM
ME/MP
REC PROOF
TOP END LED
TOP SENS
T REEL FG
5V
REEL LED
S REEL FG
MODE SW 2
MODE SW 1
MODE SW 0
M OUT 0 (COM)
CC DOWN
END SENS
TO SV-66 BOARD CN001
(See page 93.)


J702
BATTERY
TERMINAL

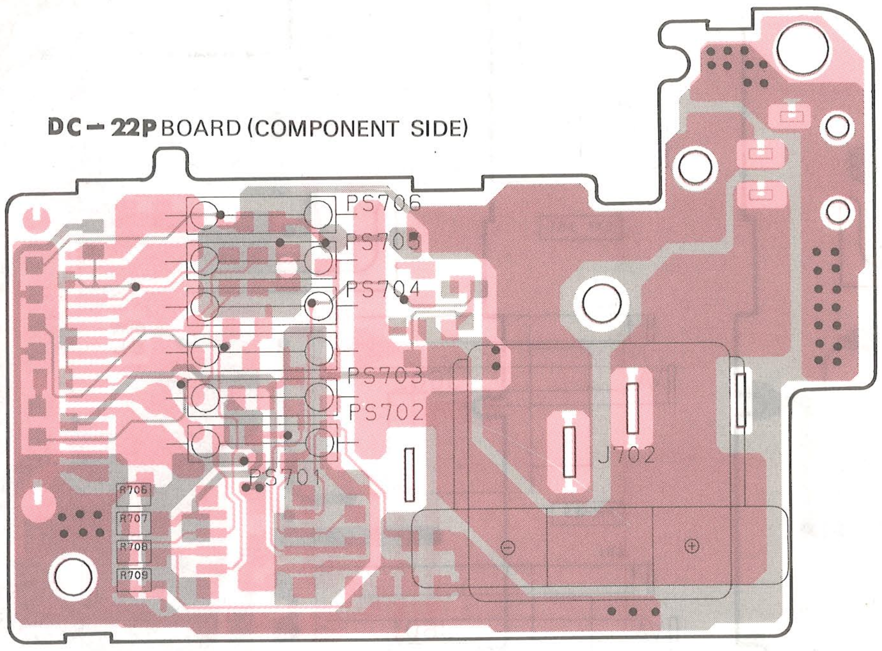
KB–10P BOARD (COMPONENT SIDE)


D803
TIMER REC
D805
STEREO
CN802
1
5
D806
BILINGUAL
D801
POWER
CHARGE
TP803
LINE/TU
TP802
TP801
GND
SERVICE
STOP
INDEX
REC
S811
SLOW
PAUSE
REW
FF
PB
S803
S806
S807
S808
S809
S810
S812
D802
D804
D808
D809
CH
W801
RB03
RB04
RB05
RB06
RB07
RB08
Q801
Q803
Q804
04

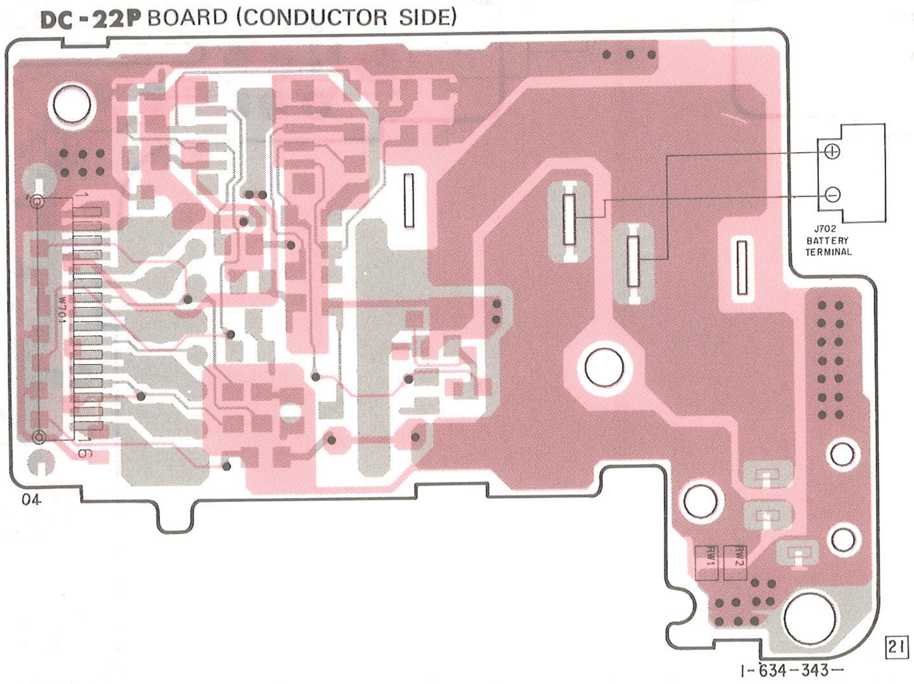
1
2
3
4
S801
UC
04

LED
TO SV-66
BOARD
CN002
(See page 93.)
(TEST)
P
OOF
LED
ENS
FG
LED
FG
W 2
W 1
W 0
(COM)
WN
ENS
TO SV-66
BOARD
CN001
(See page 93.)

DC–22P BOARD (COMPONENT SIDE)


PS706
PS705
PS704
PS703
PS702
PS701
J702
R706
R707
R708
R709
⊖
⊕

DC-22P BOARD (CONDUCTOR SIDE)

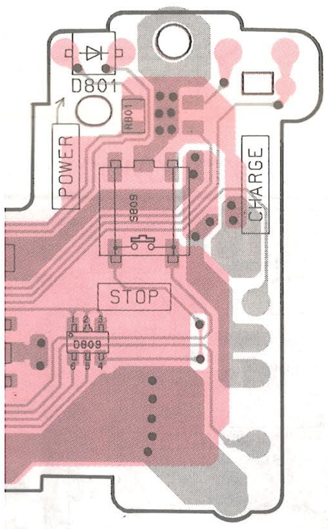

W701
1
16
J702
BATTERY
TERMINAL
04
21
1-634-343-

DIODE

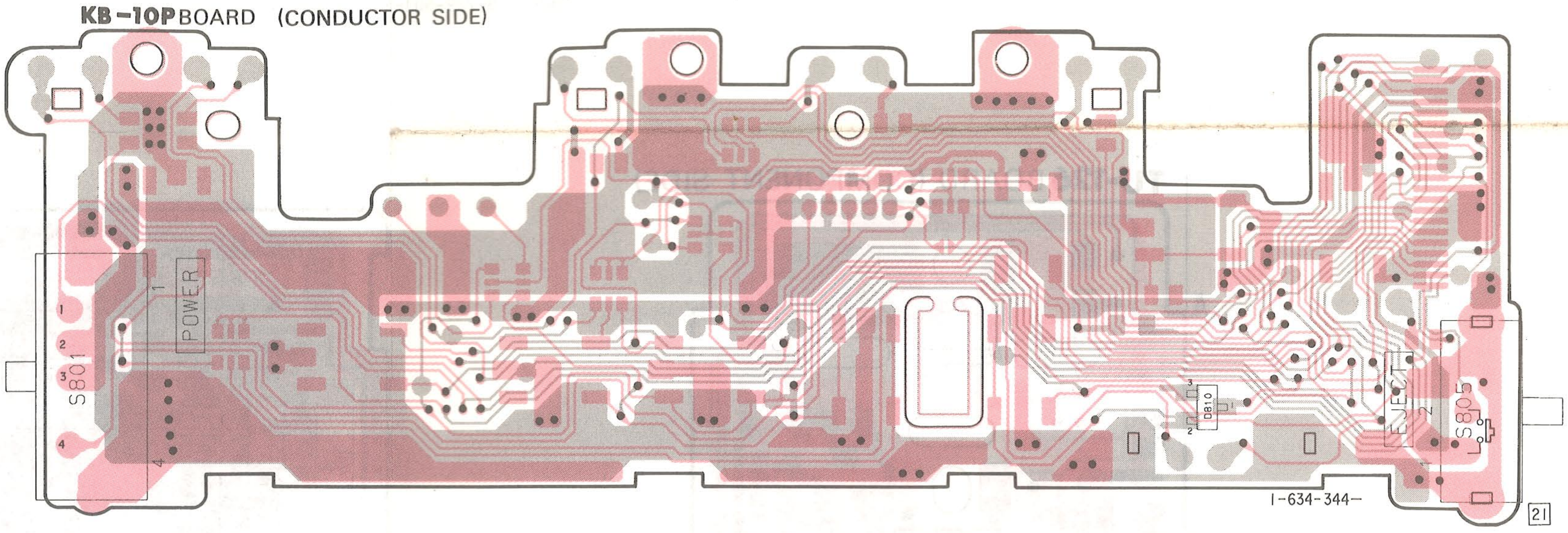
D801	8-719-937-45	DIODE GL-1EG101
D803	8-719-975-81	DIODE GL1PR111
D804	8-719-975-81	DIODE GL1PR111
D805	8-719-975-81	DIODE GL1PR111
D806	8-719-970-14	DIODE GL1HY111
D808	8-719-951-22	DIODE IMN10T108
D809	8-719-951-22	DIODE IMN10T108
D810	8-719-104-34	DIODE 1S2835-T1

TRANSISTOR

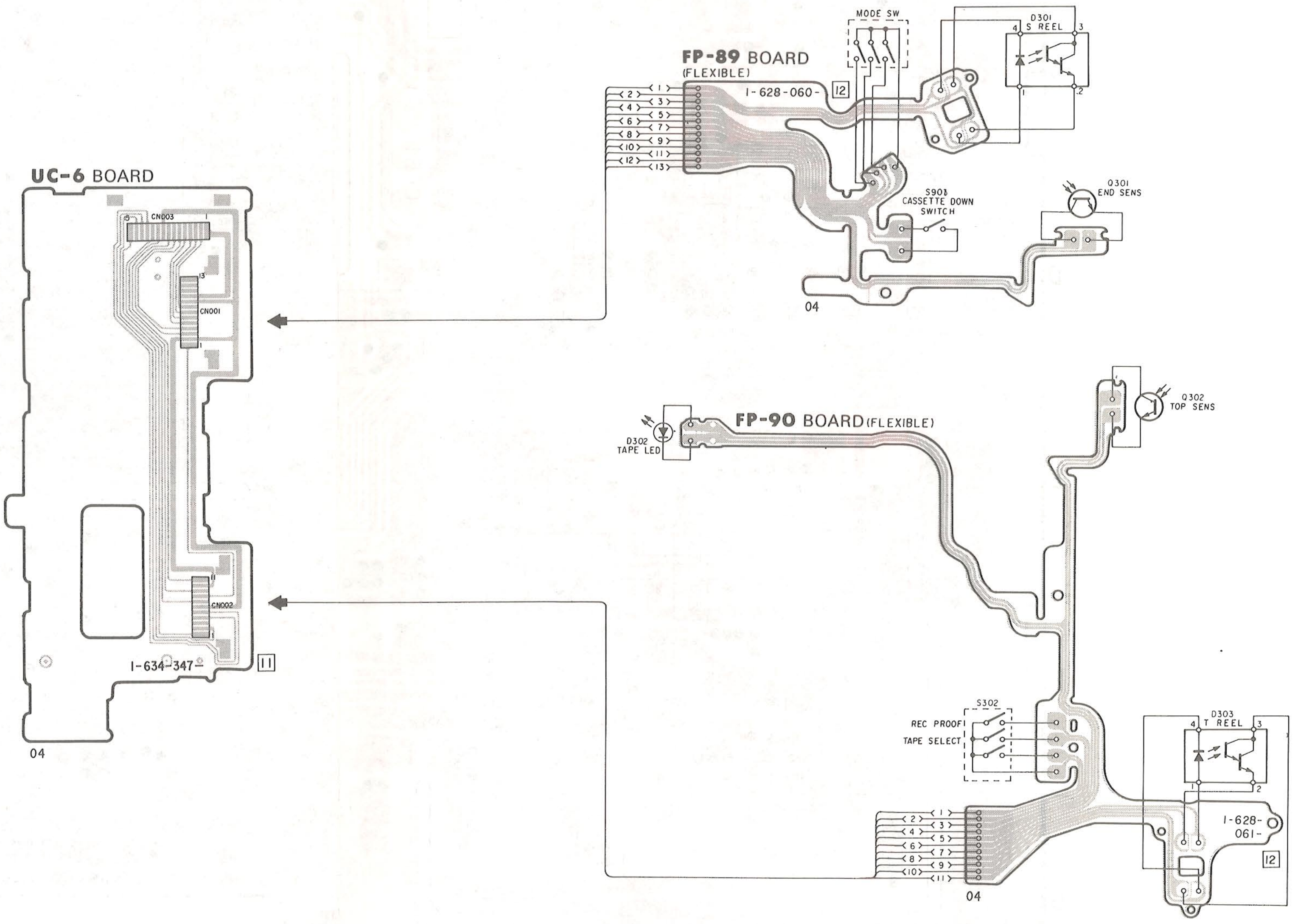
Q801	8-729-403-24	TRANSISTOR XN4210-TW
Q802	8-729-403-24	TRANSISTOR XN4210-TW
Q803	8-729-403-24	TRANSISTOR XN4210-TW
Q804	8-729-920-48	TRANSISTOR IMH2-T110


D801
R801
POWER
S809
CHARGE
STOP
D809

KB-10P BOARD (CONDUCTOR SIDE)

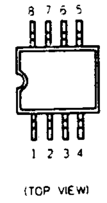

S801
POWER
1
2
3
4
D810
EJECT
S805
1-634-344-
21

UC-6 BOARD

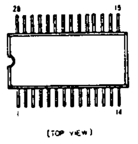

CN003
CN001
CN002
1-634-347
11
04
FP-89 BOARD (FLEXIBLE)
1-628-060-
12
MODE SW
D301 S REEL
S903 CASSETTE DOWN SWITCH
Q301 END SENS
04
FP-90 BOARD (FLEXIBLE)
D302 TAPE LED
Q302 TOP SENS
S302
REC PROOF
TAPE SELECT
D303 T REEL
1-628-061-
12
04

4-3. SEMICONDUCTORS

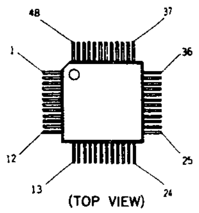
AK93C57F
FA7610N
LM311D
LM358D
LM358PS
LM393D
MC34182M
LM393ML
NJM2073M
NJM2233BM


8 7 6 5
1 2 3 4
(TOP VIEW)

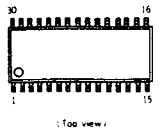
BA3570F
CXA1138M



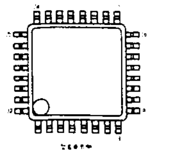
CXA1124AQ
CXA1208R
CXA1537R
MB606199


48
37
1
36
12
25
13
24
(TOP VIEW)

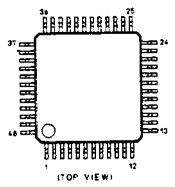
CXA1127M
CXA8006M



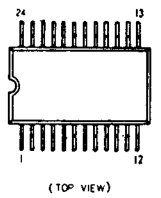
CXA1201Q



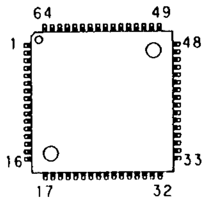
CXA1202R



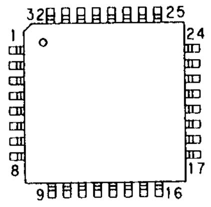
CXA1203N
M52007FP


24
13
1
12
(TOP VIEW)

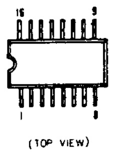
CXA1207


64
49
1
48
16
33
17
32

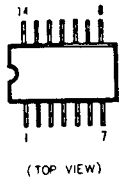
CXD2106Q


32
25
1
24
8
17
9
16

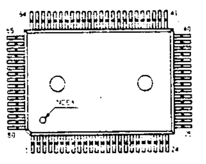
CXD2107M
CXL1506M
CX20115A
MB3775PF
MC14053BF



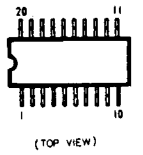
CXL5502M
μPC339G2
μPD6451AGT-601


14
8
1
7
(TOP VIEW)

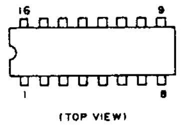
CXP50116
CXP80116
MC14094BF



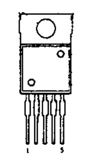
CX20102
M52018FP
TDA3842T-T


20
11
1
10
(TOP VIEW)

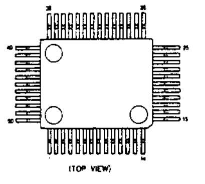
MC10H116M


16
9
1
8
(TOP VIEW)

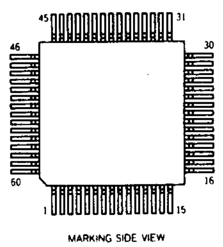
MC14052BF



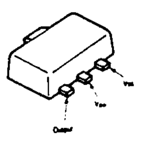
M51406FP



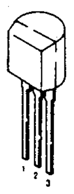
M52003T-T


45
31
46
30
60
16
1
15
MARKING SIDE VIEW

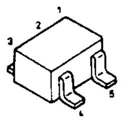
S-8052ALO-LG-S
S-8054-ALR-LN-S



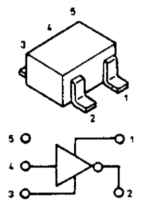
S-81350HG



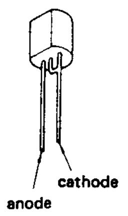
TC4SU69F
TC4S66F
TC4S81F



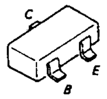
TC7S00F



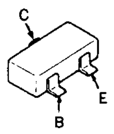
μPC574J


cathode
anode

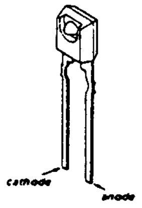
DTA114EK
DTA124EK
DTA143EK
DTA144EK
DTC114EK
DTC124EK
DTC144EK
DTC144WK
2SA1037K
2SA1162
2SA1179
2SA1576
2SB624
2SC1623
2SC2223
2SC2412K
2SC3053
2SC3326N
2SC4081



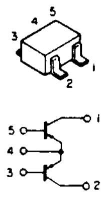
DTA114EU
DTA144EU
DTC114EU
DTC124EU
DTC143EU
DTC144EU
DTC144TU
DTC144WU
2SD1119



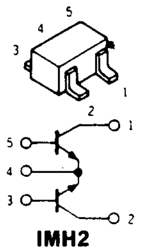
EE-TP109


cathode
anode

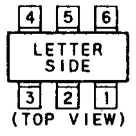
FMS1
FMY3
FMY4



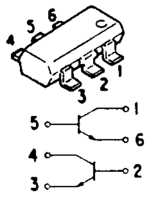
FMW1
FMW2



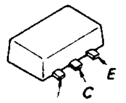
IMH2
IMX2


4 5 6
LETTER SIDE
3 2 1
(TOP VIEW)

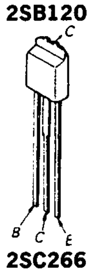
XN4210



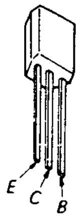
2SB1121



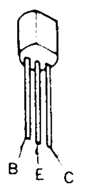
2SB1202



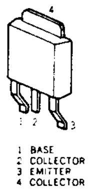
2SC2669



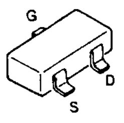
2SC3355



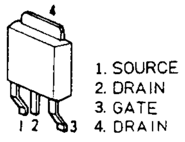
2SD1760


1. BASE
2. COLLECTOR
3. EMITTER
4. COLLECTOR

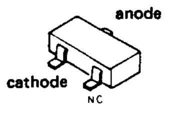
2SK209G



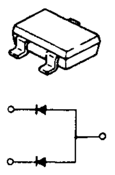
2SK1469


1. SOURCE
2. DRAIN
3. GATE
4. DRAIN

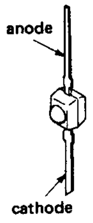
DAN202U
DA204U


anode
cathode
NC

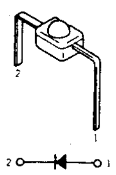
DAP202U



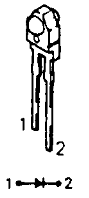
GL-1EG11


anode
cathode

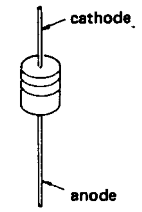
GL-1HY111
GL-1PR102



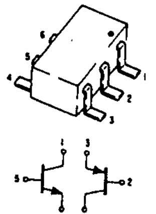
GL452S



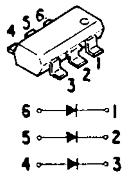
HZS12A1L
1SS119


cathode
anode

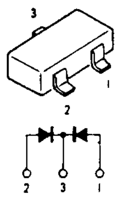
IMD2



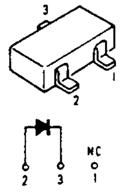
IMN10
MA121



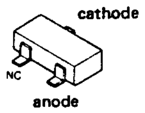
MA152WK



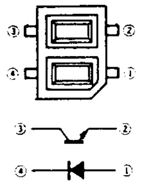
RD3.6M-B2
RD5.1M-B2
RD5.6M-B2
RD6.2M-B1
RD9.1M-B1
RD9.1M-B2
SB01-05CP
SB05-05CP



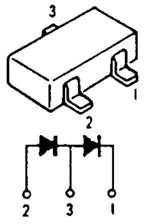
SB10-05PCP


cathode
NC
anode

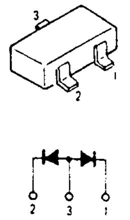
TLP-907



1SS226



1S2836



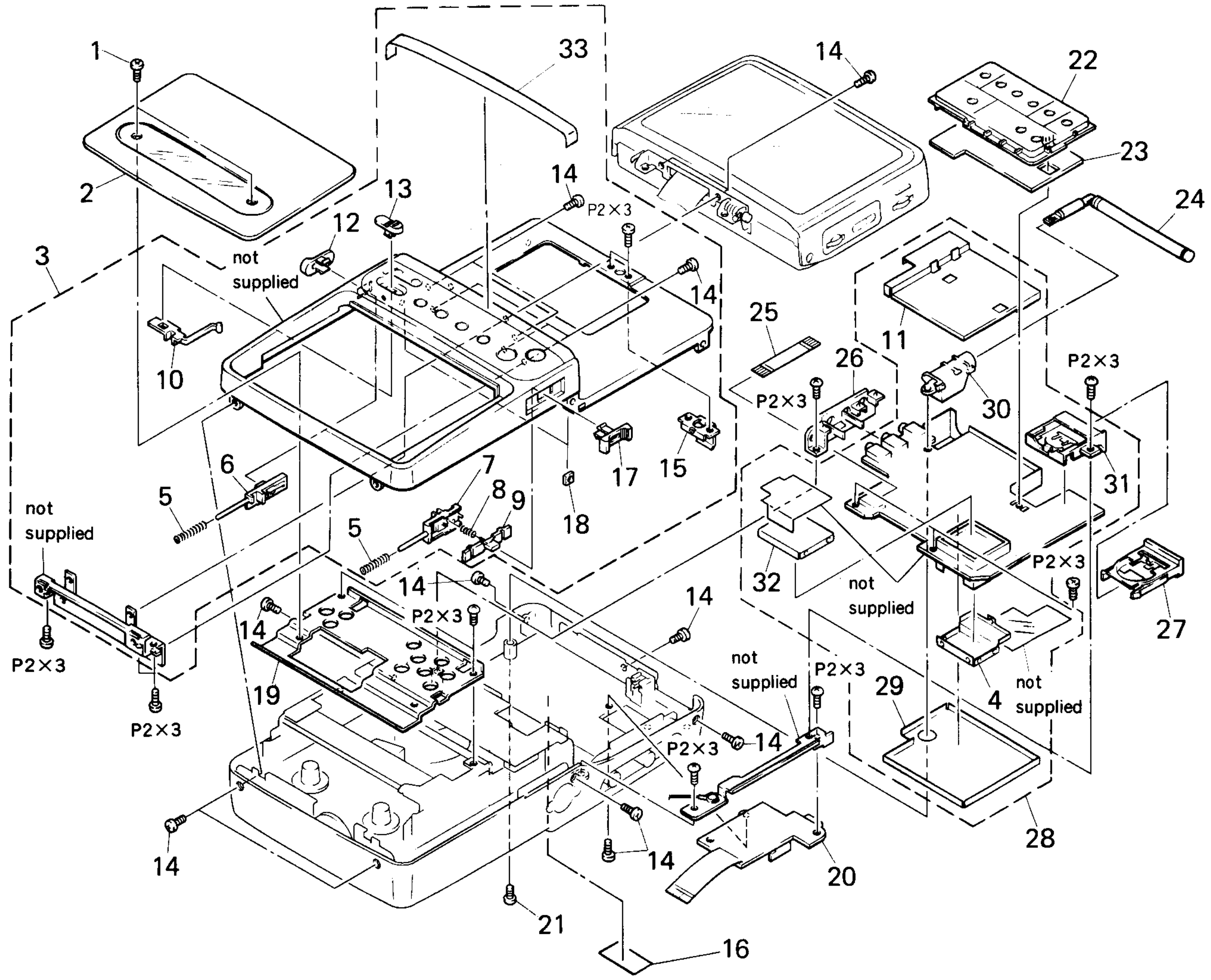
SECTION 5
EXPLODED VIEWS

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- The construction parts of an assembled part are indicated with a collation number in the remark column.

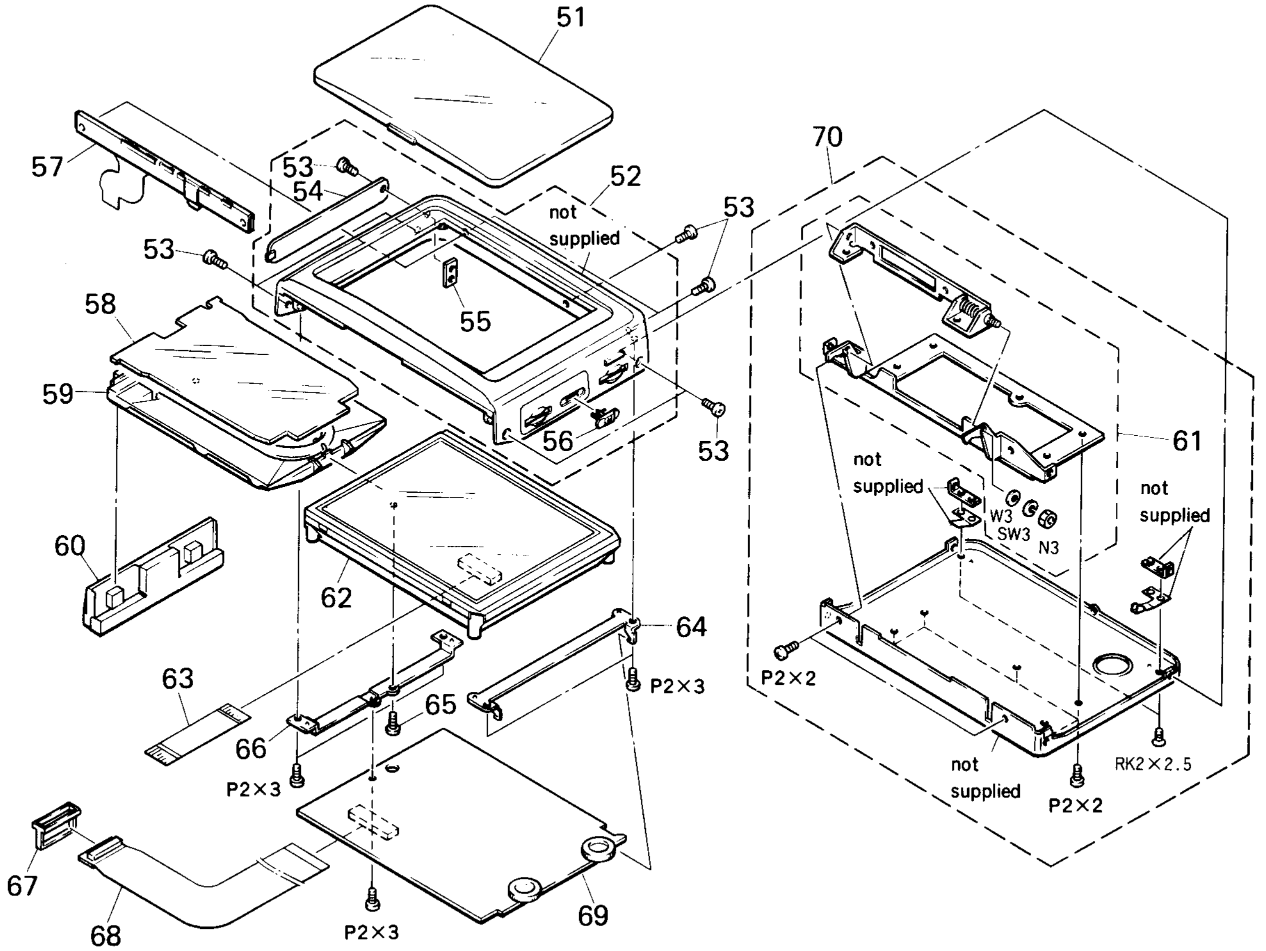
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

5-1. CABINET (UPPER) ASSEMBLY


1
2
3
33
14
22
13
12
not supplied
14
P2×3
23
24
14
10
25
26
11
P2×3
P2×3
30
6
7
5
8
9
17
15
18
31
not supplied
5
14
P2×3
P2×3
14
32
not supplied
27
P2×3
19
not supplied
P2×3
29
4
not supplied
P2×3
14
P2×3
28
14
14
20
21
16

No.	Part No.	Description	Remark
1	3-719-555-11	SCREW (M1.7X5.5)	
2	X-3940-024-1	LID ASSY, CASSETTE COMPARTMENT (AEP, UK MODEL)	
	X-3940-018-1	LID ASSY, CASSETTE COMPARTMENT (Germany MODEL)	
3	X-3940-025-1	CABINET ASSY, UPPER	5-10,12-15,17,18,33
4	3-746-907-01	LID, TDD SHIELD CASE	
5	3-741-137-01	SPRING, COMPRESSION	
6	3-740-655-01	BUTTON, EJECT LOCK	
7	3-744-133-01	PLATE, SLIDE, POWER	
8	3-303-973-00	SPRING, COMPRESSION	
9	3-744-128-01	BUTTON, POWER LOCK	
10	3-744-132-01	PLATE, SLIDE, REC	
11	X-3728-886-1	LID ASSY, TU SHIELD CASE	
12	3-740-647-01	BUTTON, EJECT	
13	3-740-648-11	BUTTON, POWER (REC)	
14	3-719-381-01	SCREW (M2X4)	
15	X-3940-043-1	PLATE, LOCK ASSY	
16	*3-940-211-01	LABEL, MODEL NUMBER (E)	
17	3-744-131-01	BUTTON, POWER	
18	3-718-233-01	NUT, PLATE	
19	X-3940-021-1	REINFORCEMENT ASSY	
20	*A-7071-288-A	DC-22P BOARD, COMPLETE	
21	3-719-381-21	SCREW (M2X6)	
22	X-3940-020-1	HOLDER ASSY, SB	
23	*A-7071-290-A	SB-3P BOARD, COMPLETE	
24	1-501-456-11	ANTENNA, TELESCOPIC	
25	1-575-856-11	CABLE, FLAT (1.0MM PITCH) 7 CORE	
26	3-744-165-01	COVER, HP JACK (AEP, UK MODEL)	
	3-744-165-31	COVER, HP JACK (Germany MODEL)	
27	X-3728-883-1	HOLDER ASSY, BATTERY	
28	*A-7062-438-A	TU-126 BOARD, COMPLETE	4, 11, 29-32
29	3-746-915-01	LID, REAR, TU SHILED CASE	
30	3-744-166-01	HOLDER, ANTENNA	
31	X-3728-887-1	GUIDE ASSY, BATTERY	
32	3-746-908-01	LID, REAR, TDD SHILED CASE	
33	3-744-134-31	PLATE, TRANSPARENT, LED	

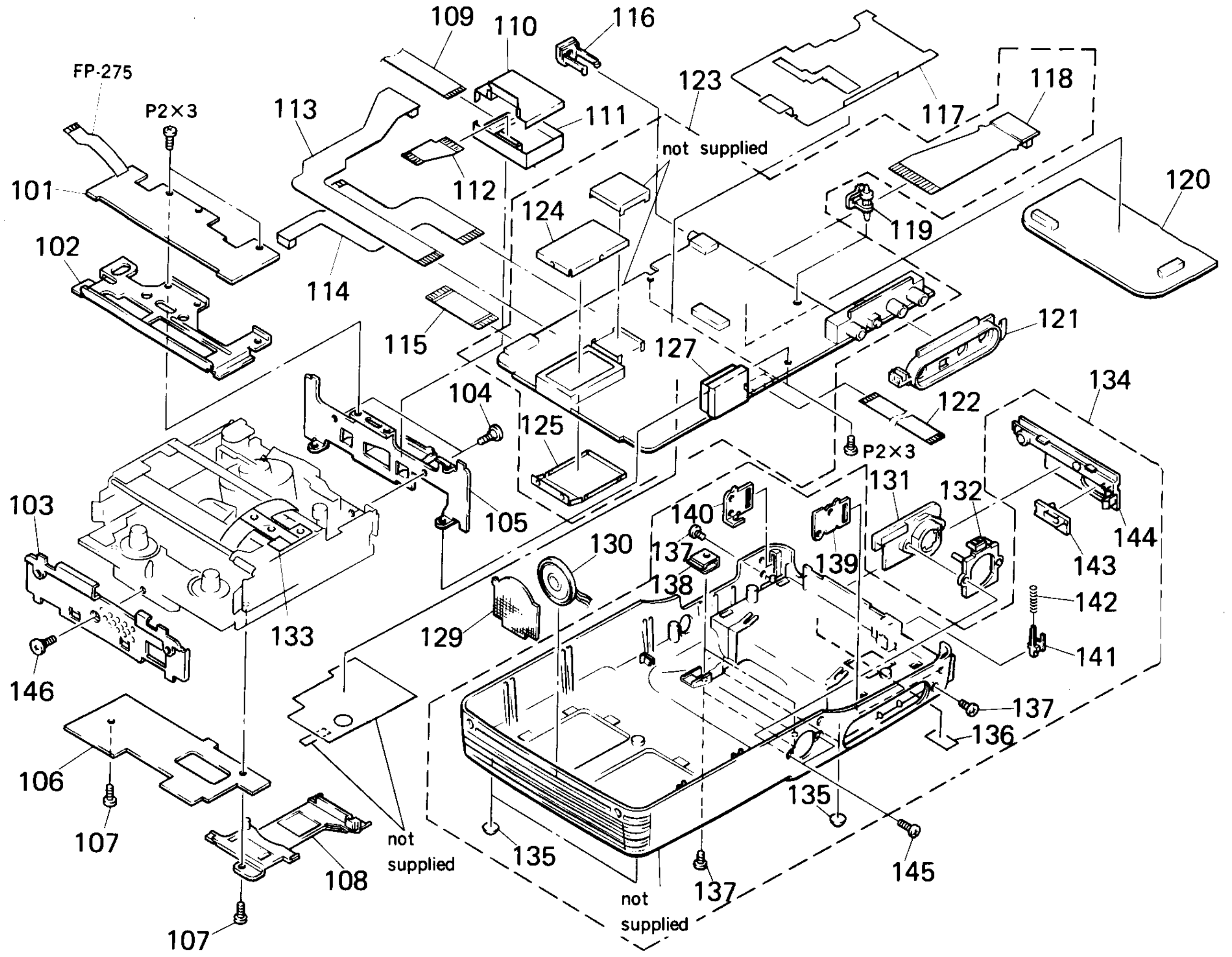
5-2. SC UNIT ASSEMBLY


51
70
57
53
54
52
not supplied
53
53
55
58
59
56
53
61
not supplied
W3
SW3
N3
not supplied
60
62
64
P2×3
63
65
P2×2
66
P2×3
not supplied
RK2×2.5
P2×2
67
68
P2×3
69

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

No.	Part No.	Description	Remark
51	3-941-319-01	WINDOW, SC	
52	X-3940-023-1	CABINET ASSY, UPPER, SC	
53	3-719-381-01	SCREW (M2X4)	
54	3-744-174-01	COVER, SIDE	
55	3-730-103-01	NUT, PLATE	
56	3-744-162-01	KNOB, DBB	
57	1-466-334-11	SWITCH BLOCK, CONTROL	
58	3-744-127-01	CURTAIN	
59	1-518-668-11	TUBE UNIT, FLUORECENT (BL901)	
60	⚠.1-466-333-11	INVERTER UNIT, DC-AC	
61	X-3749-223-1	ARM, HINGE ASSY	
62	1-809-002-12	DISPLAY MODULE, LIQUID CRYSTAL (LCD901)	
63	1-575-858-11	CABLE, FLAT (1.0MM PITCH) 16 CORE (LCD FLEXIBLE)	
64	*3-744-198-01	BRACKET (R), LCD	
65	3-719-408-01	SCREW (B2), TAPPING, P3	
66	*3-744-199-01	BRACKET (L), LCD	
67	3-744-152-01	HOLDER, FPC	
68	1-634-994-11	FP-271 FLEXIBLE BOARD	
69	*A-7062-437-A	RG-22 BOARD, COMPLETE	
70	X-3940-019-1	CABINET ASSY, BOTTOM, SC	61

5-3. CABINET (LOWER) ASSEMBLY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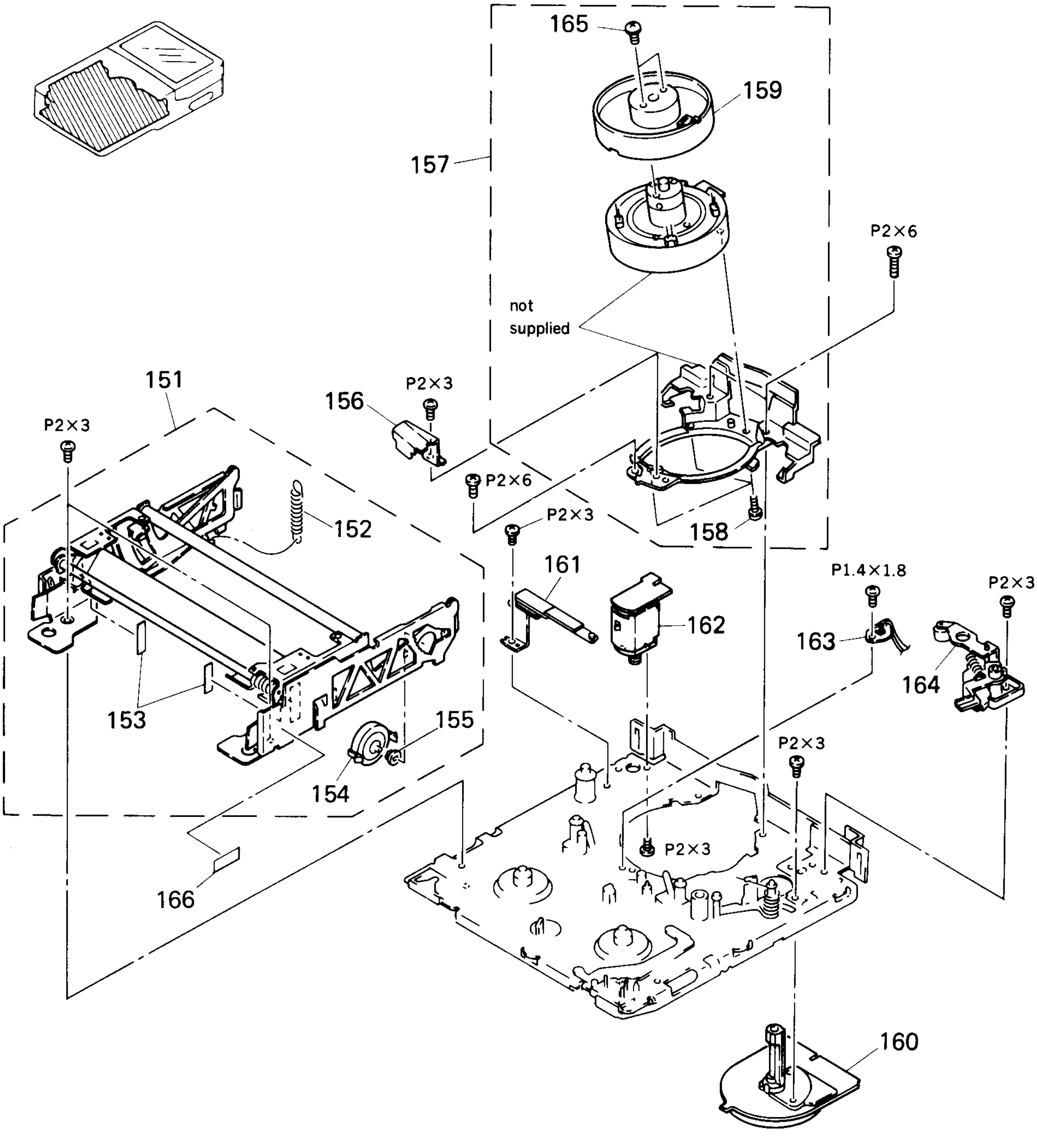
110
116
FP-275
P2×3
113
111
123
118
117
not supplied
112
120
101
124
119
102
114
121
115
127
134
104
122
125
P2×3
131
132
103
140
105
130
137
139
144
138
143
142
133
129
141
146
137
136
106
135
107
not supplied
135
145
108
not supplied
137
107

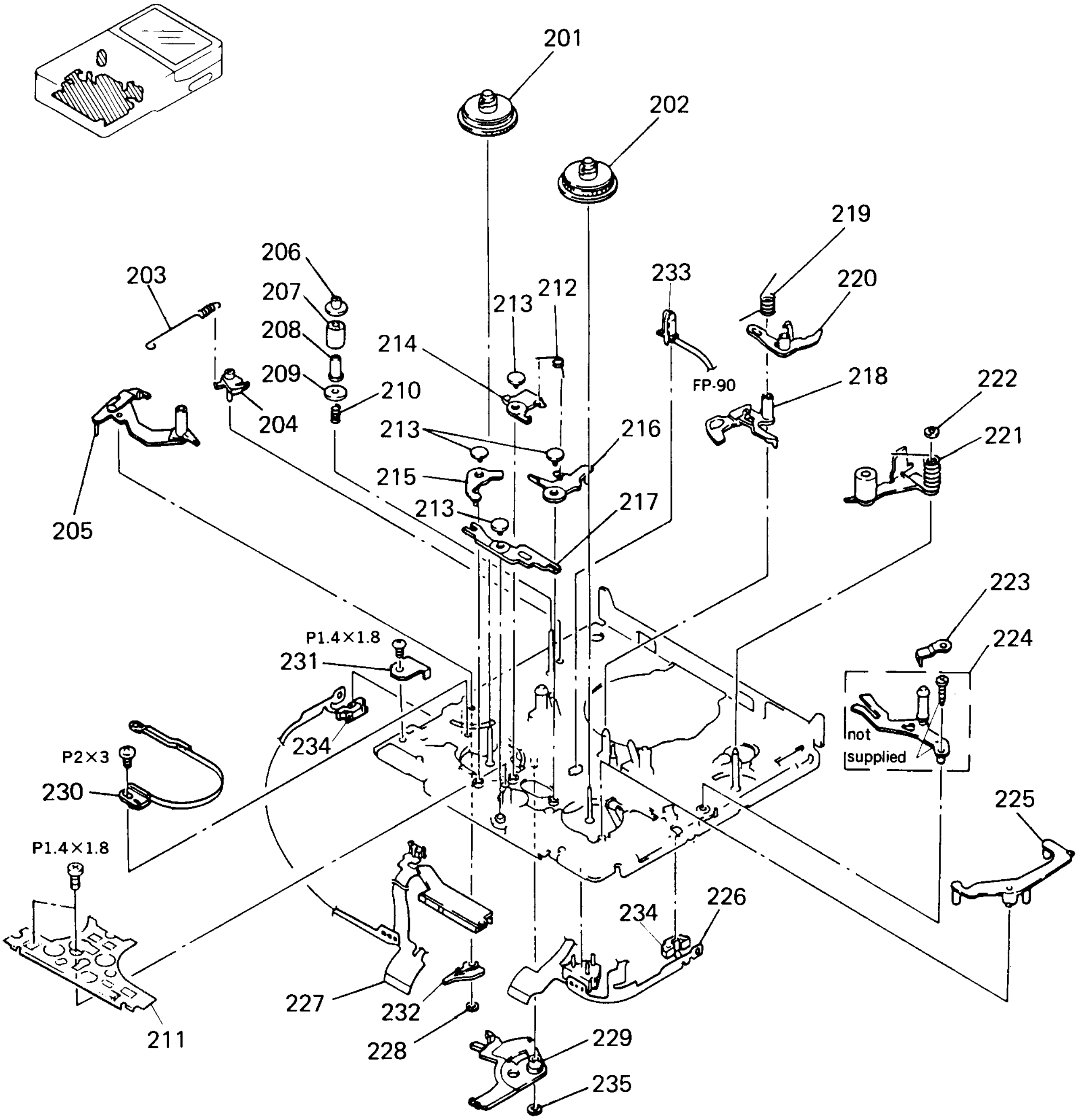
No.	Part No.	Description	Remark
101	*A-7071-287-A	KB-10P BOARD,COMPLETE	
102	X-3728-889-1	FRAME ASSY, KB	
103	X-3728-884-1	FRAME (FRONT) ASSY, MD	
104	3-732-791-11	SCREW (M2X3)	
105	X-3728-891-1	FRAME (REAR) ASSY, MD	
106	*1-634-347-11	UC-6 BOARD	
107	3-719-408-01	SCREW (B2), TAPPING, P3	
108	*3-744-176-01	COVER, MD	
109	1-634-992-11	FP-269 FLEXIBLE BOARD	
110	X-3728-885-1	LID ASSY, RP SHIELD CASE	
111	*A-7062-433-A	RP-105 BOARD, COMPLETE	
112	1-634-996-11	FP-273 FLEXIBLE BOARD	
113	1-634-997-11	FP-274 FLEXIBLE BOARD	
114	1-634-995-11	FP-272 FLEXIBLE BOARD	
115	1-575-859-11	CABLE, FLAT (1.0MM PITCH) 15 CORE	
116	3-744-169-01	COVER, CS JACK	
117	*3-941-171-01	COVER, SV	
118	1-634-993-11	FP-270 FLEXIBLE BOARD	
119	3-742-816-01	SUPPORT (V), PC BOARD	
120	*A-7062-434-A	AU-98 BOARD, COMPLETE	
121	3-744-175-01	COVER, IO JACK	
122	1-575-857-11	CABLE, FLAT (1.0MM PITCH) 12 CORE	
123	*A-7062-435-A	SV-66 BOARD, COMPLETE	118, 124-128
124	*3-746-902-01	CASE (LID), SHIELD, SDD	
125	*X-3728-888-1	LID ASSY, REAR, SDD SHIELD CASE	
127	A-7062-436-A	CC-55 BOARD, COMPLETE	
129	X-3728-892-1	SPACER ASSY, SP	
130	1-544-323-11	SPEAKER	
131	*A-7071-289-A	CN-6P BOARD, COMPLETE	
132	3-744-157-01	SPACER, CN	
133	3-746-960-01	RIBBON, LID RETAINER	
134	X-3940-022-1	CABINET ASSY, LOWER	135-144
135	3-740-607-01	CUSHION	
136	*3-747-370-01	LABEL, BATTERY FITTING	
137	3-719-381-01	SCREW (M2X4)	
138	3-736-496-01	BRACKET, STAND	
139	3-744-156-01	HOOK (R), BELT	
140	3-744-155-01	HOOK (L), BELT	
141	3-744-159-01	LEVER, RELEASE	
142	3-564-951-00	SPRING, COMPRESSION	
143	3-744-161-01	KNOB, RELEASE	
144	3-744-168-01	COVER, ANTENNA	
145	3-719-381-21	SCREW (M2X6)	
146	3-744-603-11	SCREW	

5-4. MECHANISM DECK ASSEMBLY (1)


165
159
157
not supplied
P2×6
151
156
P2×3
P2×3
152
P2×6
P2×3
158
161
162
P1.4×1.8
P2×3
163
164
153
155
P2×3
154
P2×3
166
160

No.	Part No.	Description	Remark
151	X-3728-873-1	CASSETTE COMPARTMENT ASSY	152-155
152	3-728-825-03	SPRING, TENSION	
153	*3-728-829-01	TAPE	
154	3-728-867-02	DAMPER, OIL	
155	3-728-828-02	GEAR, DAMPER	
156	3-728-868-01	GUARD, GUIDE	
157	A-7048-432-A	DRUM ASSY (DGU-61A-R)	158, 159, 165
158	3-686-493-01	SCREW, (M2X5), P1	
159	A-7049-360-A	DRUM ASSY, ROTARY 9(UPPER) DGR-61-R)	
160	8-835-331-01	MOTOR, DC U-22A (CAPSTAN) (M902)	
161	X-3728-864-1	GROUND ASSY, SHAFT	
162	A-7040-208-A	MOTOR ASSY, THREADING (LOADING) (M903)	
163	1-808-505-12	SENSOR (DEW)	
164	A-7040-207-A	ROLLER BLOCK ASSY, HC	
165	3-727-847-01	SCREW (M2X4)	
166	*3-730-176-11	SHEET, MD	

5-5. MECHANISM DECK ASSEMBLY (2)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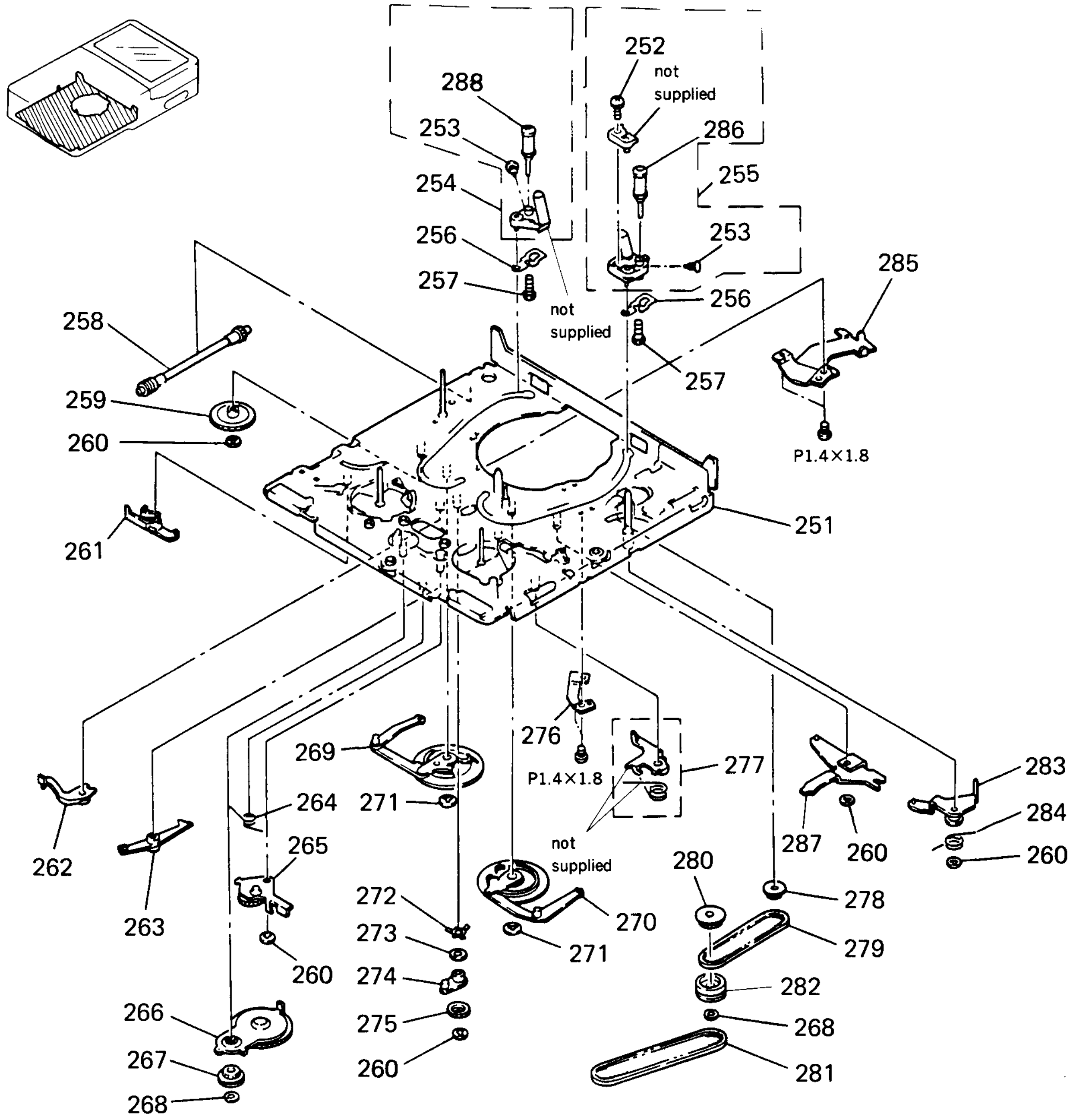
202
219
206
203
233
220
207
213
212
208
214
FP-90
218
222
209
210
204
213
216
221
215
205
213
217
223
P1.4×1.8
224
231
234
not supplied
P2×3
230
225
P1.4×1.8
234
226
227
232
211
228
229
235

No.	Part No.	Description	Remark
201	X-3728-851-1	TABLE ASSY, REEL, S	
202	X-3728-855-1	TABLE ASSY, REEL, T	
203	3-736-414-01	SPRING, TENSION	
204	3-728-855-03	ARM, ADJUSTMENT	
205	X-3728-867-1	ARM ASSY (S), TENSION REGULATOR	
206	3-726-884-01	FLANGE, UPPER, TG2	
207	3-726-883-01	ROLLER, TG2	
208	3-726-885-01	SLEEVE, TG2	
209	3-726-882-02	FLANGE, LOWER, TG2	
210	3-726-886-01	SPRING, COMPRESSION	
211	3-741-195-01	PLATE, BLIND, RK	
212	3-726-866-01	SPRING (ST), TORSION	
213	3-726-858-01	PIN, SHAFT RETAINER	
214	3-728-849-01	BRAKE, S	
215	3-726-852-01	BRAKE, LB	
216	3-728-850-01	BRAKE, T	
217	3-726-853-01	LEVER, LB	
218	3-728-875-01	STOPPER, RK	
219	3-726-864-01	SPRING (RK), TORSION	
220	3-728-852-02	ARM, RK STOPPER	
221	A-7040-219-A	ARM BLOCK ASSY, PINCH	
222	3-669-465-00	WASHER (1.5), STOPPER	
223	3-728-808-01	SPRING, LEAF	
224	X-3728-869-1	ARM ASSY, TG7	
225	3-728-848-01	ARM, LB RELEASE	
226	1-628-061-12	FP-90 FLEXIBLE BOARD	
227	1-628-060-12	FP-89 FLEXIBLE BOARD	
228	3-321-393-11	WASHER, STOPPER	
229	X-3728-863-1	LEVER ASSY, SW	
230	X-3728-859-1	BAND ASSY, TENSION REGULATOR	
231	3-730-125-01	RETAINER, SW	
232	X-3728-857-1	STOPPER ASSY, TENSION REGULATOR	
233	3-728-837-01	HOLDER, LED	
234	3-728-869-02	HOLDER, SENSOR	
235	3-726-829-01	WASHER, STOPPER	

5-6. MECHANISM DECK ASSEMBLY (3)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supplied
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253
286
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253
256
285
257
256
not
supplied
258
257
259
P1.4×1.8
260
251
261
276
269
277
264
271
P1.4×1.8
283
265
not
supplied
287
260
284
262
280
260
263
272
278
270
279
273
271
260
274
282
266
275
268
267
260
281
268

No.	Part No.	Description	Remark
251	X-3728-862-1	CHASSIS ASSY, MECHANICAL	
252	3-736-473-01	SCREW (M2X0.25) (THREE LOCK)	
253	3-726-822-01	SCREW (M1.4X2) (STEP), HEAD	
254	A-7040-184-A	COASTER (LEFT) BLOCK ASSY-ND	253, 288
255	A-7040-217-A	COASTER (RIGHT) BLOCK ASSY (N1P)	252, 253, 286
256	3-736-485-01	SPRING, LEAF, COSTER	
257	3-726-830-01	SCREW (M1.4X4) (THREE LOCK)	
258	X-3728-868-1	WORM ASSY	
259	3-744-109-01	GEAR, WHEEL	
260	3-726-829-01	WASHER, STOPPER	
261	3-728-842-01	LEVER, EJECT	
262	3-728-851-01	BRAKE, UL	
263	3-726-854-01	ARM, BRAKE RELEASE	
264	3-726-865-01	SPRING (LB), TORSION	
265	A-7040-225-A	GEAR BLOCK ASSY (N), LB	
266	X-3728-866-1	GEAR ASSY, RK	
267	X-3728-858-1	GEAR ASSY, RC	
268	3-321-393-11	WASHER, STOPPER	
269	X-3728-842-1	GEAR (LEFT) ASSY, DRIVE	
270	X-3728-843-1	GEAR (RIGHT) ASSY, DRIVE	
271	3-669-465-00	WASHER (1.5), STOPPER	
272	3-726-867-01	SPRING, LEAF	
273	3-701-436-21	WASHER, POLYEHTHYLENE	
274	3-726-857-02	ARM, UL	
275	3-726-856-02	GEAR, UL	
276	*3-726-805-01	REINFORCEMENT (TT)	
277	X-3726-808-2	BRAKE ASSY, TS	
278	X-3726-805-1	GEAR ASSY, JOINT	
279	3-728-866-11	BELT (S), TIMING	
280	X-3726-838-1	PULLEY (UPPER) ASSY, MIDWAY	
281	3-741-197-01	BELT (L), TIMING	
282	3-741-196-01	PULLEY (LOWER), BELT MIDWAY	
283	X-3726-824-1	ARM ASSY, PINCH SUB	
284	3-726-895-01	SPRING	
285	X-3726-841-1	REINFORCEMENT (SS) ASSY	
286	X-3728-810-1	ROLLER ASSY (U)(PLATING), GUIDE	
287	X-3728-846-1	LEVER ASSY, THREADING	
288	X-3726-820-1	ROLLER ASSY (U), GUIDE	

RP-105

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF: μF, PF: μμF.

RESISTORS
- All resistors are in ohms.
- F: nonflammable

COILS
- MMH: mH, UH: μH

SEMICONDUCTORS
In each case, U: μ, for example:
UA...: μA..., UPA...: μPA...,
UPC...: μPC, UPD...: μPD...

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description		Remark
	*A-7062-433-A	RP-105 BOARD, COMPLETE (Ref.No 1,000 Series) ***********************		
	1-634-992-11	FP-269 FLEXIBLE BOARD		
		CAPACITOR		
C501	1-135-180-21	TANTAL. CHIP 3.3MF	20%	6.3V
C502	1-164-361-11	CERAMIC CHIP 0.047MF		16V
C503	1-135-161-21	TANTAL. CHIP 22MF	20%	10V
C504	1-164-361-11	CERAMIC CHIP 0.047MF		16V
C505	1-135-161-21	TANTAL. CHIP 22MF	20%	10V
C506	1-164-361-11	CERAMIC CHIP 0.047MF		16V
C507	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C508	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C509	1-164-005-11	CERAMIC CHIP 0.47MF		25V
C510	1-164-633-11	CERAMIC CHIP 0.1MF	10%	25V
C511	1-164-633-11	CERAMIC CHIP 0.1MF	10%	25V
C512	1-164-633-11	CERAMIC CHIP 0.1MF	10%	25V
C513	1-164-633-11	CERAMIC CHIP 0.1MF	10%	25V
C514	1-164-005-11	CERAMIC CHIP 0.47MF		25V
C515	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C516	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C517	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C518	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C519	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C520	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C522	1-135-161-21	TANTAL. CHIP 22MF	20%	10V
C523	1-164-360-11	CERAMIC CHIP 0.1MF		16V
C524	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C525	1-164-360-11	CERAMIC CHIP 0.1MF		16V
C529	1-164-361-11	CERAMIC CHIP 0.047MF		16V
C531	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C533	1-135-161-21	TANTAL. CHIP 22MF	20%	10V
C534	1-164-361-11	CERAMIC CHIP 0.047MF		16V
C535	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C581	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C582	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C583	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C584	1-162-953-11	CERAMIC CHIP 100PF	5%	50V
C585	1-162-953-11	CERAMIC CHIP 100PF	5%	50V
C586	1-162-955-11	CERAMIC CHIP 150PF	5%	50V
C587	1-162-953-11	CERAMIC CHIP 100PF	5%	50V
		CONNECTOR		
CN501	1-565-849-11	SOCKET, CONNECTOR 11P		
CN502	1-568-740-11	CONNECTOR, FPC (1.0MM)(ZIF)18P		
CN503	1-568-340-41	CONNECTOR, BOARD TO BOARD 5P		
		IC		
IC501	8-752-033-38	IC CXA1202R		

Ref.No	Part No.	Description			Remark
		COIL			
L501	1-412-029-11	INDUCTOR CHIP 10UH			
L502	1-412-033-11	INDUCTOR CHIP 220UH			
L503	1-412-033-11	INDUCTOR CHIP 220UH			
L581	1-412-198-11	INDUCTOR 220UH			
L582	1-412-137-11	INDUCTOR 10UH			
		TRANSISTOR			
Q501	8-729-905-12	TRANSISTOR DTA144EU			
Q502	8-729-905-35	TRANSISTOR 2SC4081R			
Q581	8-729-905-23	TRANSISTOR 2SA1576R			
Q582	8-729-820-76	TRANSISTOR 2SA1179-M5M6			
		RESISTOR			
R501	1-216-837-11	METAL GLAZE 22K	5%	1/16W	
R502	1-216-825-11	METAL GLAZE 2.2K	5%	1/16W	
R503	1-216-838-11	METAL GLAZE 27K	5%	1/16W	
R504	1-216-838-11	METAL GLAZE 27K	5%	1/16W	
R505	1-216-838-11	METAL GLAZE 27K	5%	1/16W	
R506	1-216-838-11	METAL GLAZE 27K	5%	1/16W	
R507	1-216-825-11	METAL GLAZE 2.2K	5%	1/16W	
R508	1-216-837-11	METAL GLAZE 22K	5%	1/16W	
R509	1-216-839-11	METAL GLAZE 33K	5%	1/16W	
R510	1-216-838-11	METAL GLAZE 27K	5%	1/16W	
R512	1-216-841-11	METAL GLAZE 47K	5%	1/16W	
R514	1-216-841-11	METAL GLAZE 47K	5%	1/16W	
R515	1-216-837-11	METAL GLAZE 22K	5%	1/16W	
R516	1-216-841-11	METAL GLAZE 47K	5%	1/16W	
R517	1-216-825-11	METAL GLAZE 2.2K	5%	1/16W	
R520	1-216-791-11	METAL GLAZE 3.3	5%	1/16W	
R523	1-216-825-11	METAL GLAZE 2.2K	5%	1/16W	
R524	1-216-821-11	METAL GLAZE 1K	5%	1/16W	
R525	1-216-809-11	METAL GLAZE 100	5%	1/16W	
R526	1-216-809-11	METAL GLAZE 100	5%	1/16W	
R551	1-216-820-11	METAL GLAZE 820	5%	1/16W	
R552	1-216-824-11	METAL GLAZE 1.8K	5%	1/16W	
R553	1-216-864-11	METAL GLAZE 0	5%	1/16W	
R554	1-216-825-11	METAL GLAZE 2.2K	5%	1/16W	
R581	1-216-840-11	METAL GLAZE 39K	5%	1/16W	
R582	1-216-839-11	METAL GLAZE 33K	5%	1/16W	
R583	1-216-810-11	METAL GLAZE 120	5%	1/16W	
R584	1-216-815-11	METAL GLAZE 330	5%	1/16W	
R585	1-216-794-11	METAL GLAZE 5.6	5%	1/16W	
R587	1-216-821-11	METAL GLAZE 1K	5%	1/16W	
		VARIABLE RESISTOR			
RV501	1-238-092-11	RES, ADJ CERMET 47K			
RV502	1-238-092-11	RES, ADJ CERMET 47K			

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Ref.No	Part No.	Description		Remark
	*A-7062-434-A	AU-98 BOARD, COMPLETE (Ref.No 7,000 Series) **********************		
		CAPACITOR		
C104	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C105	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C106	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C107	1-162-963-11	CERAMIC CHIP 680PF	10%	50V
C108	1-135-145-11	TANTAL. CHIP 0.47MF	20%	35V
C109	1-162-965-11	CERAMIC CHIP 0.0015MF	10%	50V
C110	1-164-173-11	CERAMIC CHIP 0.0039MF	10%	50V
C111	1-162-957-11	CERAMIC CHIP 220PF	5%	50V
C112	1-162-966-11	CERAMIC CHIP 0.0022MF	10%	50V
C113	1-126-205-11	ELECT CHIP 47MF	20%	6.3V
C114	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C115	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C117	1-162-910-11	CERAMIC CHIP 5PF	0.25PF	50V
C118	1-162-968-11	CERAMIC CHIP 0.0047MF	10%	50V
C122	1-135-151-21	TANTAL. CHIP 4.7MF	20%	4V
C123	1-162-910-11	CERAMIC CHIP 5PF	0.25PF	50V
C124	1-162-587-11	CERAMIC CHIP 0.039MF	10%	25V
C125	1-162-960-11	CERAMIC CHIP 220PF	10%	50V
C126	1-162-963-11	CERAMIC CHIP 680PF	10%	50V
C127	1-164-174-11	CERAMIC CHIP 0.0082MF	10%	25V
C128	1-135-177-21	TANTAL. CHIP 1MF	20%	20V
C129	1-128-004-11	ELECT CHIP 10MF	20%	16V
C130	1-128-004-11	ELECT CHIP 10MF	20%	16V
C131	1-128-003-11	ELECT CHIP 22MF	20%	4V
C134	1-126-207-11	ELECT CHIP 33MF	20%	4V
C135	1-164-634-11	CERAMIC CHIP 1MF		16V
C136	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C137	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C138	1-164-634-11	CERAMIC CHIP 1MF		16V
C139	1-126-207-11	ELECT CHIP 33MF	20%	4V
C142	1-164-218-11	CERAMIC CHIP 180PF	0.25PF	50V
C143	1-162-966-11	CERAMIC CHIP 0.0022MF	10%	50V
C163	1-124-778-00	ELECT CHIP 22MF	20%	6.3V
C164	1-162-968-11	CERAMIC CHIP 0.0047MF	10%	50V
C165	1-162-968-11	CERAMIC CHIP 0.0047MF	10%	50V
C166	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C167	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C168	1-162-968-11	CERAMIC CHIP 0.0047MF	10%	50V
C169	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C170	1-128-003-11	ELECT CHIP 22MF	20%	4V
C171	1-128-003-11	ELECT CHIP 22MF	20%	4V
C172	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C173	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C174	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C175	1-164-361-11	CERAMIC CHIP 0.047MF		16V
C176	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C179	1-162-927-11	CERAMIC CHIP 100PF	5%	50V
C180	1-162-928-11	CERAMIC CHIP 120PF	5%	50V
C181	1-162-965-11	CERAMIC CHIP 0.0015MF	10%	50V
C182	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C183	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C204	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C205	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C206	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C207	1-162-963-11	CERAMIC CHIP 680PF	10%	50V
C208	1-135-145-11	TANTAL. CHIP 0.47MF	20%	35V
C209	1-162-965-11	CERAMIC CHIP 0.0015MF	10%	50V
C210	1-164-173-11	CERAMIC CHIP 0.0039MF	10%	50V
C211	1-162-957-11	CERAMIC CHIP 220PF	5%	50V
C212	1-162-966-11	CERAMIC CHIP 0.0022MF	10%	50V
C213	1-126-205-11	ELECT CHIP 47MF	20%	6.3V
C214	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C215	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C217	1-162-910-11	CERAMIC CHIP 5PF	0.25PF	50V
C218	1-162-968-11	CERAMIC CHIP 0.0047MF	10%	50V
C222	1-135-151-21	TANTAL. CHIP 4.7MF	20%	4V
C223	1-162-910-11	CERAMIC CHIP 5PF	0.25PF	50V
C224	1-162-587-11	CERAMIC CHIP 0.039MF	10%	25V
C225	1-162-957-11	CERAMIC CHIP 220PF	5%	50V
C226	1-162-963-11	CERAMIC CHIP 680PF	10%	50V
C227	1-164-174-11	CERAMIC CHIP 0.0082MF	10%	25V
C228	1-135-177-21	TANTAL. CHIP 1MF	20%	20V
C229	1-128-004-11	ELECT CHIP 10MF	20%	16V
C230	1-128-004-11	ELECT CHIP 10MF	20%	16V
C231	1-128-003-11	ELECT CHIP 22MF	20%	4V
C234	1-126-207-11	ELECT CHIP 33MF	20%	4V
C235	1-164-634-11	CERAMIC CHIP 1MF		16V
C236	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C237	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C238	1-164-634-11	CERAMIC CHIP 1MF		16V
C239	1-126-207-11	ELECT CHIP 33MF	20%	4V
C242	1-164-218-11	CERAMIC CHIP 180PF	0.25PF	50V
C243	1-162-966-11	CERAMIC CHIP 0.0022MF	10%	50V
C263	1-124-778-00	ELECT CHIP 22MF	20%	6.3V
C264	1-162-968-11	CERAMIC CHIP 0.0047MF	10%	50V
C265	1-162-968-11	CERAMIC CHIP 0.0047MF	10%	50V
C269	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C270	1-128-003-11	ELECT CHIP 22MF	20%	4V
C271	1-128-003-11	ELECT CHIP 22MF	20%	4V
C275	1-164-361-11	CERAMIC CHIP 0.047MF		16V
C276	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C277	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C278	1-162-919-11	CERAMIC CHIP 22PF	5%	50V
C281	1-162-965-11	CERAMIC CHIP 0.0015MF	10%	50V
C299	1-162-919-11	CERAMIC CHIP 22PF	5%	50V
C301	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C302	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C303	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C304	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C305	1-162-965-11	CERAMIC CHIP 0.0015MF	10%	50V
C306	1-162-955-11	CERAMIC CHIP 150PF	5%	50V
C307	1-135-181-21	TANTAL. CHIP 4.7MF	20%	6.3V

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description		Remark
C308	1-135-156-21	TANTAL. CHIP 6.8MF	20%	10V
C309	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C310	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C315	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C316	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C317	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C318	1-135-170-21	TANTAL. CHIP 6.8MF	20%	4V
C319	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C320	1-135-181-21	TANTAL. CHIP 4.7MF	20%	6.3V
C325	1-164-634-11	CERAMIC CHIP 1MF		16V
C326	1-164-634-11	CERAMIC CHIP 1MF		16V
C401	1-135-151-21	TANTAL. CHIP 4.7MF	20%	4V
C402	1-135-151-21	TANTAL. CHIP 4.7MF	20%	4V
C403	1-135-151-21	TANTAL. CHIP 4.7MF	20%	4V
C404	1-135-151-21	TANTAL. CHIP 4.7MF	20%	4V
C405	1-135-151-21	TANTAL. CHIP 4.7MF	20%	4V
C406	1-135-151-21	TANTAL. CHIP 4.7MF	20%	4V
C407	1-135-181-21	TANTAL. CHIP 4.7MF	20%	6.3V
C408	1-135-181-21	TANTAL. CHIP 4.7MF	20%	6.3V
C411	1-128-003-11	ELECT CHIP 22MF	20%	4V
C413	1-135-151-21	TANTAL. CHIP 4.7MF	20%	4V
C414	1-135-151-21	TANTAL. CHIP 4.7MF	20%	4V
C415	1-135-181-21	TANTAL. CHIP 4.7MF	20%	6.3V
C416	1-135-181-21	TANTAL. CHIP 4.7MF	20%	6.3V
C417	1-135-162-21	TANTAL. CHIP 33MF	20%	6.3V
C418	1-124-778-00	ELECT CHIP 22MF	20%	6.3V
C420	1-135-181-21	TANTAL. CHIP 4.7MF	20%	6.3V
C421	1-126-207-11	ELECT CHIP 33MF	20%	4V
C424	1-135-181-21	TANTAL. CHIP 4.7MF	20%	6.3V
C425	1-162-966-11	CERAMIC CHIP 0.0022MF	10%	50V
C426	1-135-181-21	TANTAL. CHIP 4.7MF	20%	6.3V
C427	1-135-181-21	TANTAL. CHIP 4.7MF	20%	6.3V
C428	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C429	1-164-634-11	CERAMIC CHIP 1MF		16V
C431	1-135-161-21	TANTAL. CHIP 22MF	20%	10V
C432	1-162-638-11	CERAMIC CHIP 1MF		16V
C433	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C434	1-135-181-21	TANTAL. CHIP 4.7MF	20%	6.3V
C435	1-162-966-11	CERAMIC CHIP 0.0022MF	10%	50V
C436	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C437	1-126-206-11	ELECT CHIP 100MF	20%	6.3V
C438	1-126-206-11	ELECT CHIP 100MF	20%	6.3V
C440	1-164-634-11	CERAMIC CHIP 1MF		16V
C441	1-164-634-11	CERAMIC CHIP 1MF		16V
C442	1-135-181-21	TANTAL. CHIP 4.7MF	20%	6.3V
C443	1-135-181-21	TANTAL. CHIP 4.7MF	20%	6.3V
C444	1-162-946-11	CERAMIC CHIP 27PF	5%	50V
C450	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C455	1-162-946-11	CERAMIC CHIP 27PF	5%	50V
C459	1-164-005-11	CERAMIC CHIP 0.47MF		25V

CONNECTOR

Ref.No	Part No.	Description	Remark
CN101	1-569-635-41	CONNECTOR, BOARD TO BOARD 20P	
CN102	1-569-636-41	CONNECTOR, BOARD TO BOARD 22P	

DIODE

Ref.No	Part No.	Description	Remark
D301	8-719-941-23	DIODE DA204U	
D401	8-719-941-09	DIODE DAP202U	
D402	8-719-941-86	DIODE DAN202U	

FILTER

Ref.No	Part No.	Description	Remark
FL101	1-236-831-11	FILTER, BAND PASS	
FL102	1-236-832-11	FILTER, BAND PASS	

IC

Ref.No	Part No.	Description	Remark
IC101	8-752-053-04	IC CXA1537R	
IC103	8-759-009-07	IC MC14053BF	
IC104	8-759-030-16	IC MC34182M	
IC105	8-759-009-07	IC MC14053BF	
IC106	8-759-030-16	IC MC34182M	
IC107	8-759-009-06	IC MC14052BF	
IC108	8-759-030-16	IC MC34182M	
IC109	8-759-030-16	IC MC34182M	
IC110	8-759-234-77	IC TC4S66F	
IC111	8-759-234-77	IC TC4S66F	
IC112	8-759-991-27	IC BA3570F	
IC113	8-752-334-42	IC CXD2106Q	
IC114	8-759-209-15	IC TC4SU69F	
IC115	8-759-209-15	IC TC4SU69F	
IC116	8-759-209-15	IC TC4SU69F	
IC201	8-752-053-04	IC CXA1537R	

COIL

Ref.No	Part No.	Description	Remark
L101	1-412-066-21	INDUCTOR CHIP 220UH	
L201	1-412-066-21	INDUCTOR CHIP 220UH	
L401	1-412-031-11	INDUCTOR CHIP 47UH	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q101	8-729-905-35	TRANSISTOR 2SC4081R	
Q102	8-729-905-12	TRANSISTOR DTA144EU	
Q106	8-729-905-35	TRANSISTOR 2SC4081R	
Q107	8-729-905-35	TRANSISTOR 2SC4081R	
Q108	8-729-905-35	TRANSISTOR 2SC4081R	
Q109	8-729-905-35	TRANSISTOR 2SC4081R	
Q111	8-729-905-35	TRANSISTOR 2SC4081R	
Q112	8-729-905-35	TRANSISTOR 2SC4081R	
Q201	8-729-905-35	TRANSISTOR 2SC4081R	
Q202	8-729-905-12	TRANSISTOR DTA144EU	
Q205	8-729-905-12	TRANSISTOR DTA144EU	
Q208	8-729-905-35	TRANSISTOR 2SC4081R	
Q209	8-729-905-35	TRANSISTOR 2SC4081R	
Q301	8-729-905-35	TRANSISTOR 2SC4081R	
Q302	8-729-905-35	TRANSISTOR 2SC4081R	
Q303	8-729-905-35	TRANSISTOR 2SC4081R	
Q304	8-729-905-12	TRANSISTOR DTA144EU	

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description				Remark
Q305	8-729-903-10	TRANSISTOR FMW1				
Q306	8-729-905-12	TRANSISTOR DTA144EU				
Q307	8-729-905-18	TRANSISTOR DTC144EU				
Q308	8-729-905-23	TRANSISTOR 2SA1576R				
Q309	8-729-905-18	TRANSISTOR DTC144EU				
Q310	8-729-905-35	TRANSISTOR 2SC4081R				
Q311	8-729-905-35	TRANSISTOR 2SC4081R				
Q313	8-729-903-10	TRANSISTOR FMW1				
Q314	8-729-905-35	TRANSISTOR 2SC4081R				
Q315	8-729-905-23	TRANSISTOR 2SA1576R				
Q316	8-729-905-18	TRANSISTOR DTC144EU				
Q317	8-729-905-18	TRANSISTOR DTC144EU				
Q318	8-729-905-18	TRANSISTOR DTC144EU				
Q319	8-729-905-35	TRANSISTOR 2SC4081R				
Q320	8-729-905-23	TRANSISTOR 2SA1576R				
Q321	8-729-905-12	TRANSISTOR DTA144EU				
Q322	8-729-905-35	TRANSISTOR 2SC4081R				
Q323	8-729-905-35	TRANSISTOR 2SC4081R				
Q401	8-729-905-35	TRANSISTOR 2SC4081R				
Q402	8-729-905-35	TRANSISTOR 2SC4081R				
Q403	8-729-905-23	TRANSISTOR 2SA1576R				
Q404	8-729-905-35	TRANSISTOR 2SC4081R				
Q405	8-729-920-XX	TRANSISTOR DTA114EU				
Q406	8-729-920-XX	TRANSISTOR DTA114EU				
Q407	8-729-905-18	TRANSISTOR DTC144EU				
Q408	8-729-905-35	TRANSISTOR 2SC4081R				
Q409	8-729-905-35	TRANSISTOR 2SC4081R				
Q410	8-729-905-18	TRANSISTOR DTC144EU				
		RESISTOR				
R101	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R105	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R106	1-216-840-11	METAL GLAZE	39K	5%	1/16W	
R107	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R108	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R110	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R111	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R112	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R113	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R114	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R115	1-216-850-11	METAL GLAZE	270K	5%	1/16W	
R116	1-216-820-11	METAL GLAZE	820	5%	1/16W	
R117	1-216-820-11	METAL GLAZE	820	5%	1/16W	
R127	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R128	1-216-836-11	METAL GLAZE	18K	5%	1/16W	
R129	1-216-840-11	METAL GLAZE	39K	5%	1/16W	
R130	1-216-851-11	METAL GLAZE	330K	5%	1/16W	
R133	1-216-836-11	METAL GLAZE	18K	5%	1/16W	
R135	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R139	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R142	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R143	1-216-828-11	METAL GLAZE	3.9K	5%	1/16W	
R144	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R145	1-216-819-11	METAL GLAZE	680	5%	1/16W	
R146	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R147	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R148	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R149	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R150	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R151	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R152	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R153	1-216-836-11	METAL GLAZE	18K	5%	1/16W	
R154	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R155	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R157	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R158	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R159	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R160	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R161	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R162	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R163	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R164	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R165	1-216-836-11	METAL GLAZE	18K	5%	1/16W	
R166	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R167	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R168	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R169	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R170	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R171	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R172	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R173	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R174	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R175	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R176	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R177	1-216-811-11	METAL GLAZE	150	5%	1/16W	
R178	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R179	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R182	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R183	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R184	1-216-842-11	METAL GLAZE	56K	5%	1/16W	
R185	1-216-836-11	METAL GLAZE	18K	5%	1/16W	
R186	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R188	1-216-824-11	METAL GLAZE	1.8K	5%	1/16W	
R189	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R190	1-216-836-11	METAL GLAZE	18K	5%	1/16W	
R191	1-216-820-11	METAL GLAZE	820	5%	1/16W	
R192	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R193	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R198	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R199	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R201	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R205	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R206	1-216-840-11	METAL GLAZE	39K	5%	1/16W	
R207	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R210	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R211	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R212	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R213	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R214	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R215	1-216-850-11	METAL GLAZE	270K	5%	1/16W	
R216	1-216-819-11	METAL GLAZE	680	5%	1/16W	
R217	1-216-819-11	METAL GLAZE	680	5%	1/16W	
R227	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R228	1-216-836-11	METAL GLAZE	18K	5%	1/16W	
R229	1-216-840-11	METAL GLAZE	39K	5%	1/16W	
R230	1-216-851-11	METAL GLAZE	330K	5%	1/16W	
R233	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R235	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R239	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R242	1-216-813-11	METAL GLAZE	220	5%	1/16W	
R243	1-216-828-11	METAL GLAZE	3.9K	5%	1/16W	
R244	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R245	1-216-819-11	METAL GLAZE	680	5%	1/16W	
R246	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R247	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R248	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R249	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R250	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R251	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R252	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R253	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R254	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R255	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R257	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R258	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R259	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R260	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R261	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R262	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R263	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R269	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R270	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R271	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R272	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R273	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R274	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R275	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R276	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R277	1-216-811-11	METAL GLAZE	150	5%	1/16W	
R278	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R279	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R280	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R281	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R284	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R293	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R298	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R301	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R302	1-216-821-11	METAL GLAZE	1K	5%	1/16W	

Ref.No	Part No.	Description				Remark
R303	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R304	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R305	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R306	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R307	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R308	1-216-853-11	METAL GLAZE	470K	5%	1/16W	
R309	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R310	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R311	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R312	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R313	1-216-828-11	METAL GLAZE	3.9K	5%	1/16W	
R314	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R315	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R316	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R318	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R319	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R323	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R324	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	
R325	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R327	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R328	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R329	1-216-828-11	METAL GLAZE	3.9K	5%	1/16W	
R330	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R331	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R332	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R333	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R334	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R335	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R336	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R337	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R338	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R339	1-216-810-11	METAL GLAZE	120	5%	1/16W	
R340	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R341	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R360	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R401	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R402	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R403	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R404	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R405	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R407	1-216-849-11	METAL GLAZE	220K	5%	1/16W	
R408	1-216-847-11	METAL GLAZE	150K	5%	1/16W	
R409	1-216-842-11	METAL GLAZE	56K	5%	1/16W	
R410	1-216-842-11	METAL GLAZE	56K	5%	1/16W	
R411	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R412	1-216-842-11	METAL GLAZE	56K	5%	1/16W	
R413	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R414	1-216-842-11	METAL GLAZE	56K	5%	1/16W	
R415	1-216-842-11	METAL GLAZE	56K	5%	1/16W	
R421	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R422	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R423	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R424	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
R425	1-216-829-11	METAL GLAZE 4.7K 5% 1/16W	
R426	1-216-831-11	METAL GLAZE 6.8K 5% 1/16W	
R427	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R428	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R429	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R430	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R431	1-216-819-11	METAL GLAZE 680 5% 1/16W	
R432	1-216-819-11	METAL GLAZE 680 5% 1/16W	
R433	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R434	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R435	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R436	1-216-836-11	METAL GLAZE 18K 5% 1/16W	
R437	1-216-829-11	METAL GLAZE 4.7K 5% 1/16W	
R438	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R440	1-216-841-11	METAL GLAZE 47K 5% 1/16W	
R441	1-216-841-11	METAL GLAZE 47K 5% 1/16W	
R442	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R443	1-216-823-11	METAL GLAZE 1.5K 5% 1/16W	
R444	1-216-816-11	METAL GLAZE 390 5% 1/16W	
R445	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R446	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R447	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R450	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R451	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R453	1-216-857-11	METAL GLAZE 1M 5% 1/16W	
R456	1-216-804-11	METAL GLAZE 39 5% 1/16W	
R457	1-216-804-11	METAL GLAZE 39 5% 1/16W	
R458	1-216-841-11	METAL GLAZE 47K 5% 1/16W	
R459	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R460	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R461	1-216-829-11	METAL GLAZE 4.7K 5% 1/16W	
R462	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R463	1-216-829-11	METAL GLAZE 4.7K 5% 1/16W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV101	1-238-091-11	RES, ADJ CERMET 22K	
RV102	1-238-090-11	RES, ADJ CERMET 10K	
RV103	1-238-090-11	RES, ADJ CERMET 10K	
RV201	1-238-092-11	RES, ADJ CERMET 47K	
RV202	1-238-090-11	RES, ADJ CERMET 10K	
RV203	1-238-091-11	RES, ADJ CERMET 22K	
RV204	1-238-089-11	RES, ADJ CERMET 4.7K	
RV301	1-238-086-11	RES, ADJ CERMET 470	
RV401	1-238-093-11	RES, ADJ CERMET 100K	
RV402	1-238-093-11	RES, ADJ CERMET 100K	

CRYSTAL

Ref.No	Part No.	Description	Remark
X101	1-579-050-11	VIBRATOR, CRYSTAL	

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Ref.No	Part No.	Description	Remark
	*A-7062-435-A	SV-66 BOARD, COMPLETE (Ref.No 5,000 Series) ********************** (Including the CC-55 board)	
	1-634-993-11	FP-270 FLEXIBLE BOARD	
	*3-746-902-01	CASE (LID), SHIELD, SDD	

CAPACITOR

Ref.No	Part No.	Description		Remark
C101	1-162-915-11	CERAMIC CHIP 10PF	0.5PF	50V
C102	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C103	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C104	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C105	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C106	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C107	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C108	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C109	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C110	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C111	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C112	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C113	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C114	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C115	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C116	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C117	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C118	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C119	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C120	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C121	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C122	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C123	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C124	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C125	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C126	1-135-159-21	TANTAL.CHIP 10MF	20%	20V
C127	1-126-206-11	ELECT CHIP 100MF	20%	6.3V
C128	1-164-633-11	CERAMIC CHIP 0.1MF	10%	25V
C131	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C132	1-164-360-11	CERAMIC CHIP 0.1MF		16V
C134	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C135	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C136	1-164-360-11	CERAMIC CHIP 0.1MF		16V
C138	1-164-360-11	CERAMIC CHIP 0.1MF		16V
C139	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C140	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C141	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C142	1-164-633-11	CERAMIC CHIP 0.1MF	10%	25V
C143	1-164-633-11	CERAMIC CHIP 0.1MF	10%	25V
C144	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C145	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C146	1-164-634-11	CERAMIC CHIP 1MF		16V
C201	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C202	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C203	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description		Remark
C204	1-164-634-11	CERAMIC CHIP 1MF		16V
C206	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C208	1-164-360-11	CERAMIC CHIP 0.1MF		16V
C209	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C210	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C211	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C212	1-164-633-11	CERAMIC CHIP 0.1MF	10%	25V
C213	1-162-969-11	CERAMIC CHIP 0.0068MF	10%	25V
C214	1-164-360-11	CERAMIC CHIP 0.1MF		16V
C215	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C216	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C217	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C218	1-164-360-11	CERAMIC CHIP 0.1MF		16V
C219	1-164-360-11	CERAMIC CHIP 0.1MF		16V
C220	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C221	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C222	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C223	1-164-634-11	CERAMIC CHIP 1MF		16V
C224	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C226	1-162-917-11	CERAMIC CHIP 15PF	5%	50V
C228	1-162-917-11	CERAMIC CHIP 15PF	5%	50V
C229	1-164-360-11	CERAMIC CHIP 0.1MF		16V
C230	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C231	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C232	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C233	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C234	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C235	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C236	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C237	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C238	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C239	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C240	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C241	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C242	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C243	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C244	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C245	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C246	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C247	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C248	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C249	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C250	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C251	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C252	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C253	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C254	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C255	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C256	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C257	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C258	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C259	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C260	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C261	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C262	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C263	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C265	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C266	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C267	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C268	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C269	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C270	1-164-634-11	CERAMIC CHIP 1MF		16V
C271	1-164-360-11	CERAMIC CHIP 0.1MF		16V
C272	1-164-360-11	CERAMIC CHIP 0.1MF		16V
C273	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C302	1-162-966-11	CERAMIC CHIP 0.0022MF	10%	50V
C305	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C308	1-162-956-11	CERAMIC CHIP 180PF	5%	50V
C309	1-162-947-11	CERAMIC CHIP 33PF	5%	50V
C310	1-162-963-11	CERAMIC CHIP 680PF	10%	50V
C311	1-164-360-11	CERAMIC CHIP 0.1MF		16V
C312	1-162-962-11	CERAMIC CHIP 470PF	10%	50V
C313	1-135-149-21	TANTAL. CHIP 2.2MF	20%	10V
C315	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C317	1-135-180-21	TANTAL. CHIP 3.3MF	20%	6.3V
C319	1-164-360-11	CERAMIC CHIP 0.1MF		16V
C320	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C321	1-164-633-11	CERAMIC CHIP 0.1MF	10%	25V
C401	1-164-360-11	CERAMIC CHIP 0.1MF		16V
C402	1-164-360-11	CERAMIC CHIP 0.1MF		16V
C403	1-127-489-11	ELECT(SOLID) 10MF	20%	10V
C404	1-127-489-11	ELECT(SOLID) 10MF	20%	10V
C405	1-127-489-11	ELECT(SOLID) 10MF	20%	10V
C406	1-127-489-11	ELECT(SOLID) 10MF	20%	10V
C407	1-163-123-00	CERAMIC CHIP 180PF	5%	50V
C408	1-164-360-11	CERAMIC CHIP 0.1MF		16V
C409	1-164-633-11	CERAMIC CHIP 0.1MF	10%	25V
C410	1-127-489-11	ELECT(SOLID) 10MF	20%	10V
C411	1-164-361-11	CERAMIC CHIP 0.047MF		16V
C412	1-127-489-11	ELECT(SOLID) 10MF	20%	10V
C413	1-164-633-11	CERAMIC CHIP 0.1MF	10%	25V
C414	1-164-633-11	CERAMIC CHIP 0.1MF	10%	25V
C415	1-162-960-11	CERAMIC CHIP 220PF	10%	50V
C416	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C417	1-164-361-11	CERAMIC CHIP 0.047MF		16V
C418	1-162-916-11	CERAMIC CHIP 12PF	5%	50V
C419	1-164-360-11	CERAMIC CHIP 0.1MF		16V
C420	1-127-491-00	ELECT(SOLID) 22MF	20%	10V
C421	1-164-360-11	CERAMIC CHIP 0.1MF		16V
C422	1-162-915-11	CERAMIC CHIP 10PF	0.5PF	50V
C423	1-162-919-11	CERAMIC CHIP 22PF	5%	50V
C424	1-127-489-11	ELECT(SOLID) 10MF	20%	10V
C425	1-162-919-11	CERAMIC CHIP 22PF	5%	50V
C426	1-127-489-11	ELECT(SOLID) 10MF	20%	10V
C427	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C428	1-127-489-11	ELECT(SOLID) 10MF	20%	10V

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description		Remark
C429	1-135-216-11	TANTAL. CHIP 10MF	20%	10V
C430	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C431	1-127-489-11	ELECT(SOLID) 10MF	20%	10V
C432	1-164-360-11	CERAMIC CHIP 0.1MF		16V
C433	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C434	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C435	1-135-159-21	TANTAL. CHIP 10MF	20%	20V
C436	1-135-181-21	TANTAL. CHIP 4.7MF	20%	6.3V
C437	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C438	1-136-718-11	TANTAL. CHIP 0.1MF	5%	25V
C439	1-164-330-21	CERAMIC CHIP 0.22MF	10%	16V
C440	1-164-330-21	CERAMIC CHIP 0.22MF	10%	16V
C441	1-164-330-21	CERAMIC CHIP 0.22MF	10%	16V
C442	1-164-634-11	CERAMIC CHIP 1MF		16V
C443	1-135-159-21	TANTAL. CHIP 10MF	20%	20V
C444	1-162-967-11	CERAMIC CHIP 0.0033MF	10%	50V
C445	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C446	1-164-330-21	CERAMIC CHIP 0.22MF	10%	16V
C447	1-162-967-11	CERAMIC CHIP 0.0033MF	10%	50V
C448	1-164-330-21	CERAMIC CHIP 0.22MF	10%	16V
C449	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C450	1-162-967-11	CERAMIC CHIP 0.0033MF	10%	50V
C451	1-164-633-11	CERAMIC CHIP 0.1MF	10%	25V
C453	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C454	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C455	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C456	1-135-180-21	TANTAL. CHIP 3.3MF	20%	6.3V
C457	1-135-149-21	TANTAL. CHIP 2.2MF	20%	10V
C458	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C460	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C461	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C601	1-124-778-00	ELECT CHIP 22MF	20%	6.3V
C602	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C603	1-128-004-11	ELECT CHIP 10MF	20%	16V
C604	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C605	1-164-361-11	CERAMIC CHIP 0.047MF		16V
C607	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C608	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C609	1-162-959-11	CERAMIC CHIP 330PF	5%	50V
C610	1-162-957-11	CERAMIC CHIP 220PF	5%	50V
C611	1-164-005-11	CERAMIC CHIP 0.47MF		25V
C612	1-135-201-11	TANTAL. CHIP 10MF	20%	4V
C613	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C614	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C615	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C616	1-128-004-11	ELECT CHIP 10MF	20%	16V
C617	1-135-180-21	TANTAL. CHIP 3.3MF	20%	6.3V
C618	1-135-201-11	TANTAL. CHIP 10MF	20%	4V
C619	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C620	1-135-180-21	TANTAL. CHIP 3.3MF	20%	6.3V
C621	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C622	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C623	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C624	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C625	1-135-177-21	TANTAL. CHIP 1MF	20%	20V
C626	1-135-201-11	TANTAL. CHIP 10MF	20%	4V
C627	1-164-005-11	CERAMIC CHIP 0.47MF		25V
C628	1-164-222-11	CERAMIC CHIP 0.22MF		25V
C629	1-135-177-21	TANTAL. CHIP 1MF	20%	20V
C630	1-126-607-11	ELECT CHIP 47MF	20%	4V
C631	1-164-361-11	CERAMIC CHIP 0.047MF		16V
C632	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C633	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C634	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C635	1-162-955-11	CERAMIC CHIP 150PF	5%	50V
C636	1-126-607-11	ELECT CHIP 47MF	20%	4V
C637	1-135-201-11	TANTAL. CHIP 10MF	20%	4V
C638	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C639	1-162-959-11	CERAMIC CHIP 330PF	5%	50V
C640	1-164-145-11	CERAMIC CHIP 390PF	5%	50V
C641	1-135-201-11	TANTAL. CHIP 10MF	20%	4V
C642	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C643	1-126-607-11	ELECT CHIP 47MF	20%	4V
C644	1-163-135-00	CERAMIC CHIP 560PF	5%	50V
C645	1-162-950-11	CERAMIC CHIP 56PF	5%	50V
C646	1-135-201-11	TANTAL. CHIP 10MF	20%	4V
C647	1-135-201-11	TANTAL. CHIP 10MF	20%	4V
C648	1-162-944-11	CERAMIC CHIP 18PF	5%	50V
C651	1-135-201-11	TANTAL. CHIP 10MF	20%	4V
C652	1-162-950-11	CERAMIC CHIP 56PF	5%	50V
C653	1-162-953-11	CERAMIC CHIP 100PF	5%	50V
C654	1-135-201-11	TANTAL. CHIP 10MF	20%	4V
C655	1-162-952-11	CERAMIC CHIP 82PF	5%	50V
C656	1-162-946-11	CERAMIC CHIP 27PF	5%	50V
C657	1-126-607-11	ELECT CHIP 47MF	20%	4V
C658	1-162-957-11	CERAMIC CHIP 220PF	5%	50V
C659	1-162-959-11	CERAMIC CHIP 330PF	5%	50V
C660	1-162-950-11	CERAMIC CHIP 56PF	5%	50V
C661	1-135-201-11	TANTAL. CHIP 10MF	20%	4V
C662	1-162-944-11	CERAMIC CHIP 18PF	5%	50V
C663	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C664	1-126-607-11	ELECT CHIP 47MF	20%	4V
C665	1-128-004-11	ELECT CHIP 10MF	20%	16V
C666	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C667	1-162-943-11	CERAMIC CHIP 15PF	5%	50V
C701	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C702	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C703	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C704	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C705	1-128-004-11	ELECT CHIP 10MF	20%	16V
C706	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C707	1-126-607-11	ELECT CHIP 47MF	20%	4V
C710	1-162-969-11	CERAMIC CHIP 0.0068MF	10%	25V
C711	1-135-177-21	TANTAL. CHIP 1MF	20%	20V
C712	1-135-177-21	TANTAL. CHIP 1MF	20%	20V
C713	1-135-210-11	TANTAL. CHIP 4.7MF	20%	10V

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Ref.No	Part No.	Description		Remark
C714	1-135-146-21	TANTAL. CHIP 0.68MF	20%	25V
C715	1-162-995-11	CERAMIC CHIP 0.022MF		50V
C716	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C717	1-162-915-11	CERAMIC CHIP 10PF	0.5PF	50V
C718	1-162-936-11	CERAMIC CHIP 5PF	0.25PF	50V
C719	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C720	1-162-949-11	CERAMIC CHIP 47PF	5%	50V
C721	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C722	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C723	1-162-967-11	CERAMIC CHIP 0.0033MF	10%	50V
C724	1-162-952-11	CERAMIC CHIP 82PF	5%	50V
C725	1-164-360-11	CERAMIC CHIP 0.1MF		16V
C726	1-162-949-11	CERAMIC CHIP 47PF	5%	50V
C727	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C728	1-162-957-11	CERAMIC CHIP 220PF	5%	50V
C729	1-162-950-11	CERAMIC CHIP 56PF	5%	50V
C730	1-162-951-11	CERAMIC CHIP 68PF	5%	50V
C731	1-162-954-11	CERAMIC CHIP 120PF	5%	50V
C732	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C733	1-162-953-11	CERAMIC CHIP 100PF	5%	50V
C734	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C735	1-162-955-11	CERAMIC CHIP 150PF	5%	50V
C741	1-128-004-11	ELECT CHIP 10MF	20%	16V
C742	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C743	1-163-118-00	CERAMIC CHIP 110PF	5%	50V
C744	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C745	1-135-149-21	TANTAL. CHIP 2.2MF	20%	10V
C746	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C748	1-135-210-11	TANTAL. CHIP 4.7MF	20%	10V
C749	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C750	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C751	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C752	1-135-177-21	TANTAL. CHIP 1MF	20%	20V
C753	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C754	1-162-941-11	CERAMIC CHIP 10PF	0.5PF	50V
C755	1-162-953-11	CERAMIC CHIP 100PF	5%	50V
C756	1-162-936-11	CERAMIC CHIP 5PF	0.25PF	50V
C757	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C758	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C759	1-162-921-11	CERAMIC CHIP 33PF	5%	50V
C760	1-162-923-11	CERAMIC CHIP 47PF	5%	50V
C761	1-164-360-11	CERAMIC CHIP 0.1MF		16V
C771	1-135-217-21	TANTAL. CHIP 15MF	20%	6.3V
C772	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C773	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C774	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C775	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C776	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C777	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C778	1-164-361-11	CERAMIC CHIP 0.047MF		16V
C779	1-164-005-11	CERAMIC CHIP 0.47MF		25V
C780	1-135-177-21	TANTAL. CHIP 1MF	20%	20V
C781	1-126-246-11	ELECT CHIP 220MF	20%	4V
C788	1-164-005-11	CERAMIC CHIP 0.47MF		25V
C789	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C790	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C791	1-164-005-11	CERAMIC CHIP 0.47MF		25V
C792	1-164-005-11	CERAMIC CHIP 0.47MF		25V
C793	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C794	1-124-778-00	ELECT CHIP 22MF	20%	6.3V
C798	1-135-149-21	TANTAL. CHIP 2.2MF	20%	10V
C799	1-135-146-21	TANTAL. CHIP 0.68MF	20%	25V
C801	1-164-361-11	CERAMIC CHIP 0.047MF		16V
C804	1-162-965-11	CERAMIC CHIP 0.0015MF	10%	50V
C805	1-162-958-11	CERAMIC CHIP 270PF	5%	50V
C806	1-162-943-11	CERAMIC CHIP 15PF	5%	50V
C807	1-162-949-11	CERAMIC CHIP 47PF	5%	50V
C809	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C813	1-162-995-11	CERAMIC CHIP 0.022MF		50V
C826	1-164-634-11	CERAMIC CHIP 1MF		16V
C827	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C828	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C829	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C831	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C832	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C833	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C836	1-162-943-11	CERAMIC CHIP 15PF	5%	50V
C837	1-162-995-11	CERAMIC CHIP 0.022MF		50V
C838	1-162-948-11	CERAMIC CHIP 39PF	5%	50V
C839	1-162-943-11	CERAMIC CHIP 15PF	5%	50V
C840	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C841	1-162-995-11	CERAMIC CHIP 0.022MF		50V
C842	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C843	1-162-995-11	CERAMIC CHIP 0.022MF		50V
C844	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C845	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C846	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C847	1-162-942-11	CERAMIC CHIP 12PF	5%	50V
C850	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C851	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C852	1-163-116-00	CERAMIC CHIP 91PF	5%	50V
C854	1-163-104-00	CERAMIC CHIP 30PF	5%	50V
C855	1-162-951-11	CERAMIC CHIP 68PF	5%	50V
C856	1-162-955-11	CERAMIC CHIP 150PF	5%	50V
C859	1-162-954-11	CERAMIC CHIP 120PF	5%	50V
C901	1-164-361-11	CERAMIC CHIP 0.047MF		16V
C902	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C903	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C905	1-164-360-11	CERAMIC CHIP 0.1MF		16V
C906	1-135-156-21	TANTAL. CHIP 6.8MF	20%	10V
C907	1-164-360-11	CERAMIC CHIP 0.1MF		16V
C908	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C909	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C911	1-164-634-11	CERAMIC CHIP 1MF		16V
C912	1-164-634-11	CERAMIC CHIP 1MF		16V
C913	1-164-634-11	CERAMIC CHIP 1MF		16V
C999	1-161-772-11	CERAMIC 0.1MF	10%	25V

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Ref.No	Part No.	Description	Remark
		FILTER	
CF701	1-577-162-11	FILTER, CERAMIC (5.17MHz)	
		CONNECTOR	
CN001	1-566-531-11	CONNECTOR, FPC (ZIF) 15P	
CN002	1-569-030-11	CONNECTOR, FPC (ZIF) 21P	
CN003	1-569-481-11	CONNECTOR, FPC 30P	
CN004	1-569-633-61	CONNECTOR, BOARD TO BOARD 26P	
CN005	1-569-631-41	CONNECTOR, BOARD TO BOARD 20P	
CN006	1-569-632-41	CONNECTOR, BOARD TO BOARD 22P	
CN007	1-566-532-11	CONNECTOR, FPC (ZIF) 16P	
CN008	1-569-363-21	CONNECTOR, FPC 15P	
CN009	1-566-531-11	CONNECTOR, FPC (ZIF) 15P	
CN601	*1-566-091-11	PIN, BOARD TO BOARD 6P	
CN701	1-566-528-21	CONNECTOR, FPC (ZIF) 12P	
CN801	1-566-534-21	CONNECTOR, FPC (ZIF) 18P	
		TRIMMER	
CV101	1-141-424-11	CAP, ADJ 30P	
		DIODE	
D101	8-719-938-72	DIODE SB01-05CP	
D103	8-719-105-52	DIODE RD3.6M-B2	
D104	8-719-105-XX	DIODE RD6.2M-B1	
D107	8-719-941-09	DIODE DAP202U	
D108	8-719-404-40	DIODE MA121	
D201	8-719-941-86	DIODE DAN202U	
D202	8-719-404-40	DIODE MA121	
D203	8-719-404-40	DIODE MA121	
D204	8-719-941-09	DIODE DAP202U	
D205	8-719-941-09	DIODE DAP202U	
D206	8-719-941-09	DIODE DAP202U	
D301	8-719-941-86	DIODE DAN202U	
D401	8-719-938-78	DIODE SB10-05PCP	
D402	8-719-941-09	DIODE DAP202U	
D403	8-719-938-75	DIODE SB05-05CP	
D404	8-719-938-75	DIODE SB05-05CP	
D601	8-719-404-40	DIODE MA121	
D701	8-719-941-86	DIODE DAN202U	
D702	8-719-941-86	DIODE DAN202U	
D741	8-719-941-86	DIODE DAN202U	
D742	8-719-941-86	DIODE DAN202U	
D771	8-719-404-40	DIODE MA121	
D802	8-719-800-76	DIODE 1SS226	
D901	8-719-106-44	DIODE RD9.1M-B2	
D902	8-719-106-44	DIODE RD9.1M-B2	
		FERRITE BEAD	
FB101	1-543-256-11	BEAD, FERRITE	
FB102	1-412-390-21	INDUCTOR CHIP OUH	
FB201	1-543-256-11	BEAD, FERRITE	
FB202	1-543-256-11	BEAD, FERRITE	
FB203	1-412-390-21	INDUCTOR CHIP OUH	
FB204	1-412-390-21	INDUCTOR CHIP OUH	
FB205	1-543-256-11	BEAD, FERRITE	
		FILTER	
FL651	1-236-848-21	FILTER, LOW PASS	
FL652	1-236-847-21	FILTER, LOW PASS	
FL653	1-236-751-21	FILTER, LOW PASS	
FL654	1-415-764-21	DELAY LINE, LC	
FL701	1-236-849-21	FILTER, BAND PASS	
FL702	1-236-186-11	FILTER, BAND PASS	
FL741	1-236-850-21	FILTER, BAND PASS	
FL801	1-409-475-21	FILTER, TRAP	
		IC	
IC101	8-752-815-30	IC CXP50116-093Q	
IC102	8-759-502-36	IC S-81350HG	
IC103	8-759-940-33	IC S-8052ALO-LG-S	
IC104	8-759-946-03	IC S-8054ALR-LN-S	
IC105	8-759-720-23	IC AK93C57F	
IC106	8-759-009-22	IC MC14094BF	
IC107	8-759-209-15	IC TC4SU69F	
IC108	8-759-209-97	IC TC4S81F	
IC109	8-759-209-97	IC TC4S81F	
IC201	8-759-234-77	IC TC4S66F	
IC202	8-759-234-77	IC TC4S66F	
IC204	8-759-999-11	IC LM358D	
IC206	8-752-815-31	IC CXP80116-805Q	
IC301	1-809-200-11	ATF-HIC (PAL)	
IC302	8-759-100-97	IC UPC339G2	
IC401	⚠8-759-945-17	IC MB3775PF	
IC402	⚠8-759-998-94	IC LM311D	
IC403	8-759-990-55	IC CXA8006M	
IC404	8-759-805-06	IC CXA1127M	
IC405	8-759-107-68	IC CX20115A	
IC601	8-752-036-19	IC CXA1207	
IC651	8-759-710-86	IC NJM2233BM	
IC701	8-752-036-20	IC CXA1208R	
IC741	8-759-605-61	IC CXA1203N	
IC771	8-752-033-40	IC CXA1201Q	
IC802	8-759-012-00	IC MC10H116M	
IC901	8-759-701-02	IC NJM2073M	
		JACK	
J101	1-563-282-11	JACK, SMALL TYPE	
J701	1-569-639-11	JACK, PIN 3P	
		COIL	
L102	1-410-993-11	INDUCTOR CHIP 1UH	
L103	1-410-993-11	INDUCTOR CHIP 1UH	
L104	1-410-993-11	INDUCTOR CHIP 1UH	
L105	1-410-993-11	INDUCTOR CHIP 1UH	
L106	1-410-993-11	INDUCTOR CHIP 1UH	

When indicating parts by reference number, please include the board name.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref.No	Part No.	Description	Remark
L107	1-410-993-11	INDUCTOR CHIP 1UH	
L201	1-408-789-21	INDUCTOR CHIP 100UH	
L203	1-410-993-11	INDUCTOR CHIP 1UH	
L204	1-410-993-11	INDUCTOR CHIP 1UH	
L205	1-410-993-11	INDUCTOR CHIP 1UH	
L206	1-410-993-11	INDUCTOR CHIP 1UH	
L207	1-410-993-11	INDUCTOR CHIP 1UH	
L208	1-410-993-11	INDUCTOR CHIP 1UH	
L209	1-410-993-11	INDUCTOR CHIP 1UH	
L210	1-410-993-11	INDUCTOR CHIP 1UH	
L211	1-410-993-11	INDUCTOR CHIP 1UH	
L401	1-424-104-11	COIL, CHOKE 10UH	
L402	1-410-337-11	INDUCTOR 1UH	
L403	1-424-104-11	COIL, CHOKE 10UH	
L404	1-424-104-11	COIL, CHOKE 10UH	
L405	1-424-106-11	COIL, CHOKE 47UH	
L406	1-424-104-11	COIL, CHOKE 10UH	
L407	1-424-106-11	COIL, CHOKE 47UH	
L408	1-424-105-11	COIL, CHOKE 22UH	
L409	1-408-789-21	INDUCTOR CHIP 100UH	
L601	1-412-029-11	INDUCTOR CHIP 10UH	
L602	1-412-032-11	INDUCTOR CHIP 100UH	
L603	1-410-379-31	INDUCTOR CHIP 6.8UH	
L604	1-410-390-11	INDUCTOR CHIP 56UH	
L605	1-410-391-11	INDUCTOR CHIP 68UH	
L651	1-410-388-21	INDUCTOR CHIP 39UH	
L652	1-410-390-11	INDUCTOR CHIP 56UH	
L653	1-410-391-11	INDUCTOR CHIP 68UH	
L654	1-410-392-11	INDUCTOR CHIP 82UH	
L702	1-410-386-11	INDUCTOR CHIP 27UH	
L703	1-410-393-11	INDUCTOR CHIP 100UH	
L704	1-410-379-31	INDUCTOR CHIP 6.8UH	
L705	1-410-393-11	INDUCTOR CHIP 100UH	
L706	1-410-656-11	INDUCTOR CHIP 150UH	
L707	1-410-655-31	INDUCTOR CHIP 120UH	
L708	1-410-393-11	INDUCTOR CHIP 100UH	
L709	1-412-031-11	INDUCTOR CHIP 47UH	
L741	1-412-031-11	INDUCTOR CHIP 47UH	
L771	1-412-029-11	INDUCTOR CHIP 10UH	
L772	1-412-032-11	INDUCTOR CHIP 100UH	
L773	1-412-032-11	INDUCTOR CHIP 100UH	
L801	1-410-167-41	INDUCTOR CHIP 820UH	
L802	1-410-657-21	INDUCTOR CHIP 180UH	
L803	1-412-032-11	INDUCTOR CHIP 100UH	
L804	1-412-032-11	INDUCTOR CHIP 100UH	
L808	1-410-386-11	INDUCTOR CHIP 27UH	
L809	1-410-381-11	INDUCTOR CHIP 10UH	
L810	1-410-386-11	INDUCTOR CHIP 27UH	
L811	1-410-380-31	INDUCTOR CHIP 8.2UH	
L813	1-410-386-11	INDUCTOR CHIP 27UH	
L817	1-410-658-31	INDUCTOR CHIP 220UH	
L818	1-410-656-11	INDUCTOR CHIP 150UH	
L819	1-412-280-31	INDUCTOR 330UH	

Ref.No	Part No.	Description	Remark
L901	1-412-032-11	INDUCTOR CHIP 100UH	
L902	1-412-031-11	INDUCTOR CHIP 47UH	

IC LINK

PS101 ⚠	1-532-605-00	LINK, IC	
PS201 ⚠	1-532-605-00	LINK, IC	

TRANSISTOR

Q101	8-729-905-18	TRANSISTOR DTC144EU	
Q102	8-729-905-35	TRANSISTOR 2SC4081R	
Q103	8-729-220-93	TRANSISTOR 2SK209G	
Q104	8-729-905-18	TRANSISTOR DTC144EU	
Q105	8-729-905-35	TRANSISTOR 2SC4081R	
Q106	8-729-905-23	TRANSISTOR 2SA1576R	
Q107	8-729-220-93	TRANSISTOR 2SK209G	
Q108	8-729-220-93	TRANSISTOR 2SK209G	
Q109	8-729-905-12	TRANSISTOR DTA144EU	
Q110	8-729-905-35	TRANSISTOR 2SC4081R	
Q111	8-729-905-26	TRANSISTOR 2SA1576Q	
Q112	8-729-905-26	TRANSISTOR 2SA1576Q	
Q113	8-729-921-08	TRANSISTOR DTC144TU	
Q114	8-729-403-24	TRANSISTOR XN4210	
Q116	8-729-403-24	TRANSISTOR XN4210	
Q117	8-729-905-18	TRANSISTOR DTC144EU	
Q118	8-729-920-59	TRANSISTOR IMX2	
Q120	8-729-905-35	TRANSISTOR 2SC4081R	
Q201	8-729-905-35	TRANSISTOR 2SC4081R	
Q202	8-729-905-35	TRANSISTOR 2SC4081R	
Q203	8-729-921-08	TRANSISTOR DTC144TU	
Q204	8-729-902-96	TRANSISTOR FMS1	
Q205	8-729-903-82	TRANSISTOR FMW2	
Q206	8-729-907-00	TRANSISTOR DTC114EU	
Q207	8-729-905-35	TRANSISTOR 2SC4081	
Q208	8-729-820-46	TRANSISTOR 2SB1202FAS	
Q209	8-729-905-35	TRANSISTOR 2SC4081R	
Q210	8-729-403-24	TRANSISTOR XN4210	
Q212	8-729-905-12	TRANSISTOR DTA144EU	
Q213	8-729-905-18	TRANSISTOR DTC144EU	
Q214	8-729-905-18	TRANSISTOR DTC144EU	
Q215	8-729-905-18	TRANSISTOR DTC144EU	
Q216	8-729-905-35	TRANSISTOR 2SC4081R	
Q301	8-729-905-23	TRANSISTOR 2SA1576R	
Q302	8-729-905-35	TRANSISTOR 2SC4081R	
Q303	8-729-905-23	TRANSISTOR 2SA1576R	
Q304	8-729-905-35	TRANSISTOR 2SC4081R	
Q305	8-729-905-18	TRANSISTOR DTC144EU	
Q306	8-729-905-18	TRANSISTOR DTC144EU	
Q307	8-729-920-48	TRANSISTOR IMH2	
Q401	8-729-905-35	TRANSISTOR 2SC4081R	
Q402	8-729-901-04	TRANSISTOR DTA114EK	
Q403	8-729-905-35	TRANSISTOR 2SC4081R	
Q404	⚠8-729-805-25	TRANSISTOR 2SB1121	
Q405	8-729-905-35	TRANSISTOR 2SC4081R	

When indicating parts by reference number, please include the board name.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

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Ref.No	Part No.	Description	Remark
Q406	8-729-905-61	TRANSISTOR DTC124EU	
Q407	8-729-905-35	TRANSISTOR 2SC4081R	
Q408	⚠8-729-805-25	TRANSISTOR 2SB1121	
Q409	⚠8-729-805-25	TRANSISTOR 2SB1121	
Q410	8-729-805-25	TRANSISTOR 2SB1121	
Q411	8-729-805-25	TRANSISTOR 2SB1121	
Q412	8-729-905-35	TRANSISTOR 2SC4081R	
Q413	8-729-907-00	TRANSISTOR DTC114EU	
Q415	8-729-905-18	TRANSISTOR DTC144EU	
Q416	8-729-905-12	TRANSISTOR DTA144EU	
Q418	8-729-141-48	TRANSISTOR 2SB624-BV345	
Q419	8-729-907-00	TRANSISTOR DTC114EU	
Q420	8-729-907-00	TRANSISTOR DTC114EU	
Q601	8-729-905-12	TRANSISTOR DTA144EU	
Q602	8-729-905-35	TRANSISTOR 2SC4081R	
Q603	8-729-905-35	TRANSISTOR 2SC4081R	
Q604	8-729-905-35	TRANSISTOR 2SC4081R	
Q605	8-729-905-23	TRANSISTOR 2SA1576R	
Q609	8-729-905-18	TRANSISTOR DTC144EU	
Q651	8-729-905-23	TRANSISTOR 2SA1576R	
Q652	8-729-905-35	TRANSISTOR 2SC4081R	
Q653	8-729-905-35	TRANSISTOR 2SC4081R	
Q654	8-729-905-23	TRANSISTOR 2SA1576R	
Q655	8-729-905-35	TRANSISTOR 2SC4081R	
Q656	8-729-905-35	TRANSISTOR 2SC4081R	
Q657	8-729-905-23	TRANSISTOR 2SA1576R	
Q658	8-729-905-35	TRANSISTOR 2SC4081R	
Q659	8-729-905-35	TRANSISTOR 2SC4081R	
Q660	8-729-905-23	TRANSISTOR 2SA1576R	
Q661	8-729-905-12	TRANSISTOR DTA144EU	
Q662	8-729-905-18	TRANSISTOR DTC144EU	
Q663	8-729-920-48	TRANSISTOR IMH2	
Q665	8-729-905-35	TRANSISTOR 2SC4081R	
Q701	8-729-905-35	TRANSISTOR 2SC4081R	
Q702	8-729-905-18	TRANSISTOR DTC144EU	
Q703	8-729-905-35	TRANSISTOR 2SC4081R	
Q704	8-729-905-18	TRANSISTOR DTC144EU	
Q705	8-729-905-35	TRANSISTOR 2SC4081R	
Q706	8-729-905-23	TRANSISTOR 2SA1576R	
Q707	8-729-905-35	TRANSISTOR 2SC4081R	
Q709	8-729-905-18	TRANSISTOR DTC144EU	
Q741	8-729-905-18	TRANSISTOR DTC144EU	
Q743	8-729-905-12	TRANSISTOR DTA144EU	
Q744	8-729-907-39	TRANSISTOR IMD2	
Q745	8-729-920-48	TRANSISTOR IMH2	
Q746	8-729-905-35	TRANSISTOR 2SC4081R	
Q747	8-729-905-35	TRANSISTOR 2SC4081R	
Q748	8-729-905-18	TRANSISTOR DTC144EU	
Q749	8-729-102-07	TRANSISTOR 2SC2223-F13	
Q750	8-729-905-35	TRANSISTOR 2SC4081R	
Q751	8-729-905-35	TRANSISTOR 2SC4081R	

Ref.No	Part No.	Description	Remark
Q771	8-729-907-00	TRANSISTOR DTC114EU	
Q772	8-729-905-12	TRANSISTOR DTA144EU	
Q773	8-729-905-18	TRANSISTOR DTC144EU	
Q774	8-729-905-18	TRANSISTOR DTC144EU	
Q775	8-729-905-35	TRANSISTOR 2SC4081R	
Q777	8-729-905-23	TRANSISTOR 2SA1576R	
Q778	8-729-905-18	TRANSISTOR DTC144EU	
Q779	8-729-905-35	TRANSISTOR 2SC4081R	
Q780	8-729-141-48	TRANSISTOR 2SB624-BV345	
Q804	8-729-905-35	TRANSISTOR 2SC4081R	
Q806	8-729-905-12	TRANSISTOR DTA144EU	
Q808	8-729-905-35	TRANSISTOR 2SC4081R	
Q809	8-729-905-23	TRANSISTOR 2SA1576R	
Q813	8-729-905-18	TRANSISTOR DTC144EU	
Q814	8-729-141-48	TRANSISTOR 2SB624-BV345	
Q815	8-729-905-35	TRANSISTOR 2SC4081R	
Q818	8-729-822-51	TRANSISTOR 2SK1469-FA	
Q819	8-729-141-48	TRANSISTOR 2SB624-BV345	
Q820	8-729-905-18	TRANSISTOR DTC144EU	
Q822	8-729-905-35	TRANSISTOR 2SC4081R	
Q823	8-729-905-23	TRANSISTOR 2SA1576R	
Q824	8-729-905-35	TRANSISTOR 2SC4081R	
Q825	8-729-905-23	TRANSISTOR 2SA1576R	
Q826	8-729-905-35	TRANSISTOR 2SC4081R	
Q827	8-729-905-35	TRANSISTOR 2SC4081R	
Q831	8-729-920-48	TRANSISTOR IMH2	
Q901	8-729-905-35	TRANSISTOR 2SC4081R	
Q902	8-729-141-48	TRANSISTOR 2SB624-BV345	
Q911	8-729-905-35	TRANSISTOR 2SC4081R	
Q912	8-729-905-35	TRANSISTOR 2SC4081R	

RESISTOR

R101	1-216-845-11	METAL GLAZE	100K	5%	1/16W
R102	1-216-821-11	METAL GLAZE	1K	5%	1/16W
R103	1-216-851-11	METAL GLAZE	330K	5%	1/16W
R104	1-216-841-11	METAL GLAZE	47K	5%	1/16W
R105	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R106	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R107	1-216-845-11	METAL GLAZE	100K	5%	1/16W
R108	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R109	1-216-821-11	METAL GLAZE	1K	5%	1/16W
R110	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R112	1-216-845-11	METAL GLAZE	100K	5%	1/16W
R113	1-216-845-11	METAL GLAZE	100K	5%	1/16W
R114	1-216-845-11	METAL GLAZE	100K	5%	1/16W
R115	1-216-821-11	METAL GLAZE	1K	5%	1/16W
R118	1-216-841-11	METAL GLAZE	47K	5%	1/16W
R127	1-216-845-11	METAL GLAZE	100K	5%	1/16W
R130	1-216-861-11	METAL GLAZE	2.2M	5%	1/16W
R131	1-216-834-11	METAL GLAZE	12K	5%	1/16W
R132	1-216-861-11	METAL GLAZE	2.2M	5%	1/16W
R133	1-216-861-11	METAL GLAZE	2.2M	5%	1/16W
R135	1-216-839-11	METAL GLAZE	33K	5%	1/16W

When indicating parts by reference number, please include the board name.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref.No	Part No.	Description				Remark
R136	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R137	1-216-843-11	METAL GLAZE	68K	5%	1/16W	
R138	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R139	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R140	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R141	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R144	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R145	1-216-849-11	METAL GLAZE	220K	5%	1/16W	
R146	1-216-822-11	METAL GLAZE	1.2K	5%	1/16W	
R147	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R155	1-216-849-11	METAL GLAZE	220K	5%	1/16W	
R156	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R157	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R158	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R159	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R160	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R161	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R162	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R163	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R164	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R165	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R166	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R167	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R168	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R169	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R170	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R171	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R172	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R173	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R174	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R175	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R179	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R181	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R182	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R184	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R186	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R188	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R190	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R191	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R194	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R195	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R196	1-216-815-11	METAL GLAZE	330	5%	1/16W	
R197	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R198	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R201	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R202	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R203	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R204	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R205	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R206	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R207	1-216-851-11	METAL GLAZE	330K	5%	1/16W	
R208	1-216-832-11	METAL GLAZE	8.2K	5%	1/16W	
R209	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R210	1-216-843-11	METAL GLAZE	68K	5%	1/16W	
R211	1-216-843-11	METAL GLAZE	68K	5%	1/16W	
R212	1-216-828-11	METAL GLAZE	3.9K	5%	1/16W	
R213	1-216-192-00	METAL GLAZE	560	5%	1/8W	
R214	1-216-172-00	METAL GLAZE	82	5%	1/8W	
R215	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R216	1-216-828-11	METAL GLAZE	3.9K	5%	1/16W	
R217	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R218	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R219	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R220	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R221	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R222	1-216-853-11	METAL GLAZE	470K	5%	1/16W	
R223	1-216-853-11	METAL GLAZE	470K	5%	1/16W	
R224	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R225	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R226	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	
R227	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R228	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R229	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R230	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R231	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R232	1-216-842-11	METAL GLAZE	56K	5%	1/16W	
R233	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R235	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R236	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R237	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R238	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R239	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R241	1-216-336-11	METAL GLAZE	47K	1%	1/10W	
R242	1-216-336-11	METAL GLAZE	47K	1%	1/10W	
R250	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R251	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R252	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R253	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R262	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R264	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R265	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R267	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R268	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R269	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R270	1-216-194-00	METAL GLAZE	680	5%	1/8W	
R271	1-216-194-00	METAL GLAZE	680	5%	1/8W	
R272	1-216-194-00	METAL GLAZE	680	5%	1/8W	
R273	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R274	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R275	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R276	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R277	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R278	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R279	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R280	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R281	1-216-833-11	METAL GLAZE	10K	5%	1/16W	

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description				Remark
R282	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R283	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R284	1-216-865-11	METAL GLAZE	3K	5%	1/16W	
R299	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R301	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R302	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R303	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R304	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R305	1-216-854-11	METAL GLAZE	560K	5%	1/16W	
R306	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R307	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R308	1-216-823-11	METAL GLAZE	1.5K	5%	1/16W	
R309	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R312	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R313	1-216-847-11	METAL GLAZE	150K	5%	1/16W	
R314	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R316	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R317	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R318	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R319	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R320	1-216-811-11	METAL GLAZE	150	5%	1/16W	
R321	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R322	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R323	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R325	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R326	1-216-824-11	METAL GLAZE	1.8K	5%	1/16W	
R327	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R328	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R329	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R330	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R331	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R332	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R334	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R342	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R401	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R402	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R403	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R404	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R405	1-216-828-11	METAL GLAZE	3.9K	5%	1/16W	
R407	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R408	1-216-836-11	METAL GLAZE	18K	5%	1/16W	
R409	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R410	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R411	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R412	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R413	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R414	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R415	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R416	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R417	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R418	1-216-824-11	METAL GLAZE	1.8K	5%	1/16W	
R419	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R420	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R421	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R422	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R423	1-216-823-11	METAL GLAZE	1.5K	5%	1/16W	
R424	1-216-823-11	METAL GLAZE	1.5K	5%	1/16W	
R425	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R426	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	
R427	1-216-824-11	METAL GLAZE	1.8K	5%	1/16W	
R428	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R429	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R430	1-216-823-11	METAL GLAZE	1.5K	5%	1/16W	
R431	1-216-789-11	METAL GLAZE	2.2	5%	1/16W	
R432	1-216-789-11	METAL GLAZE	2.2	5%	1/16W	
R433	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R434	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R435	1-216-789-11	METAL GLAZE	2.2	5%	1/16W	
R436	1-216-815-11	METAL GLAZE	330	5%	1/16W	
R437	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R438	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R439	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R440	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R441	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R443	1-216-836-11	METAL GLAZE	18K	5%	1/16W	
R444	1-216-848-11	METAL GLAZE	180K	5%	1/16W	
R445	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R446	1-216-848-11	METAL GLAZE	180K	5%	1/16W	
R447	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R448	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R450	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R451	1-216-836-11	METAL GLAZE	18K	5%	1/16W	
R452	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R453	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R454	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R455	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R456	1-216-801-11	METAL GLAZE	22	5%	1/16W	
R460	1-217-671-11	METAL GLAZE	1	5%	1/10W	
R461	1-217-671-11	METAL GLAZE	1	5%	1/10W	
R462	1-217-671-11	METAL GLAZE	1	5%	1/10W	
R463	1-217-671-11	METAL GLAZE	1	5%	1/10W	
R464	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R466	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R467	1-216-828-11	METAL GLAZE	3.9K	5%	1/16W	
R468	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R469	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R470	1-216-815-11	METAL GLAZE	330	5%	1/16W	
R471	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R601	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R602	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R603	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R604	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R605	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R606	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R607	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R608	1-216-821-11	METAL GLAZE	1K	5%	1/16W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R609	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R610	1-216-861-11	METAL GLAZE	2.2M	5%	1/16W	
R611	1-216-849-11	METAL GLAZE	220K	5%	1/16W	
R612	1-218-349-11	METAL GLAZE	240K	5%	1/16W	
R614	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R615	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R616	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R617	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R618	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R619	1-216-832-11	METAL GLAZE	8.2K	5%	1/16W	
R620	1-216-832-11	METAL GLAZE	8.2K	5%	1/16W	
R621	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R622	1-216-822-11	METAL GLAZE	1.2K	5%	1/16W	
R623	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R624	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R629	1-216-811-11	METAL GLAZE	150	5%	1/16W	
R630	1-216-813-11	METAL GLAZE	220	5%	1/16W	
R631	1-216-815-11	METAL GLAZE	330	5%	1/16W	
R632	1-216-801-11	METAL GLAZE	22	5%	1/16W	
R633	1-216-820-11	METAL GLAZE	820	5%	1/16W	
R634	1-216-819-11	METAL GLAZE	680	5%	1/16W	
R635	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	
R636	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R637	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R638	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R639	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R640	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R641	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	
R651	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R652	1-216-842-11	METAL GLAZE	56K	5%	1/16W	
R653	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R654	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R655	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R656	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R657	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R658	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R659	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R660	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R661	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R662	1-216-842-11	METAL GLAZE	56K	5%	1/16W	
R663	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R664	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R665	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R666	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R667	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R668	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R669	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R670	1-216-822-11	METAL GLAZE	1.2K	5%	1/16W	
R671	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	
R672	1-216-819-11	METAL GLAZE	680	5%	1/16W	
R673	1-216-819-11	METAL GLAZE	680	5%	1/16W	
R674	1-216-813-11	METAL GLAZE	220	5%	1/16W	
R675	1-216-814-11	METAL GLAZE	270	5%	1/16W	

Ref.No	Part No.	Description				Remark
R676	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R677	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R678	1-216-813-11	METAL GLAZE	220	5%	1/16W	
R679	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R680	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R681	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R682	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R683	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R684	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R685	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R686	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R687	1-216-816-11	METAL GLAZE	390	5%	1/16W	
R688	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R689	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	
R690	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R701	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R702	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R703	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R705	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R706	**1-249-441-11**	**CARBON**	**100K**			
R707	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	
R708	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	
R709	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R710	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R711	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	
R712	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R715	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R716	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R717	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R718	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R719	1-216-816-11	METAL GLAZE	390	5%	1/16W	
R720	1-216-822-11	METAL GLAZE	1.2K	5%	1/16W	
R721	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R722	1-216-822-11	METAL GLAZE	1.2K	5%	1/16W	
R724	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R725	1-216-818-11	METAL GLAZE	560	5%	1/16W	
R726	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R727	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R728	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R729	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R730	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R731	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R732	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R733	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R734	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R736	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R737	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R738	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R739	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R741	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R742	1-216-832-11	METAL GLAZE	8.2K	5%	1/16W	
R743	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R744	1-216-816-11	METAL GLAZE	390	5%	1/16W	
R745	1-216-820-11	METAL GLAZE	820	5%	1/16W	

When indicating parts by reference number, please include the board name.

SV-66

Ref.No	Part No.	Description				Remark	Ref.No	Part No.	Description				Remark
R746	1-216-699-11	METAL CHIP	100K	0.50%	1/10W		R809	1-216-818-11	METAL GLAZE	560	5%	1/16W	
R747	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W		R810	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R748	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W		R811	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R749	1-216-845-11	METAL GLAZE	100K	5%	1/16W		R822	1-216-822-11	METAL GLAZE	1.2K	5%	1/16W	
R750	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W		R825	1-216-836-11	METAL GLAZE	18K	5%	1/16W	
R751	1-216-821-11	METAL GLAZE	1K	5%	1/16W		R826	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R752	1-216-821-11	METAL GLAZE	1K	5%	1/16W		R832	1-216-840-11	METAL GLAZE	39K	5%	1/16W	
R753	1-216-845-11	METAL GLAZE	100K	5%	1/16W		R833	1-216-022-00	METAL GLAZE	75	5%	1/10W	
R754	1-216-845-11	METAL GLAZE	100K	5%	1/16W		R834	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R755	1-216-845-11	METAL GLAZE	100K	5%	1/16W		R835	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R756	1-216-841-11	METAL GLAZE	47K	5%	1/16W		R836	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R757	1-216-833-11	METAL GLAZE	10K	5%	1/16W		R837	1-216-849-11	METAL GLAZE	220K	5%	1/16W	
R758	1-216-821-11	METAL GLAZE	1K	5%	1/16W		R838	1-216-828-11	METAL GLAZE	3.9K	5%	1/16W	
R759	1-216-821-11	METAL GLAZE	1K	5%	1/16W		R839	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R760	1-216-817-11	METAL GLAZE	470	5%	1/16W		R840	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R761	1-216-822-11	METAL GLAZE	1.2K	5%	1/16W		R841	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R762	1-216-839-11	METAL GLAZE	33K	5%	1/16W		R843	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R763	1-216-835-11	METAL GLAZE	15K	5%	1/16W		R844	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R764	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W		R847	1-216-818-11	METAL GLAZE	560	5%	1/16W	
R765	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W		R849	1-216-836-11	METAL GLAZE	18K	5%	1/16W	
R766	1-216-833-11	METAL GLAZE	10K	5%	1/16W		R850	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R767	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W		R851	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R768	1-216-841-11	METAL GLAZE	47K	5%	1/16W		R852	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R769	1-216-833-11	METAL GLAZE	10K	5%	1/16W		R855	1-216-814-11	METAL GLAZE	270	5%	1/16W	
R770	1-216-824-11	METAL GLAZE	1.8K	5%	1/16W		R856	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R771	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W		R857	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R772	1-216-809-11	METAL GLAZE	100	5%	1/16W		R860	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R773	1-216-821-11	METAL GLAZE	1K	5%	1/16W		R861	1-216-818-11	METAL GLAZE	560	5%	1/16W	
R774	1-216-821-11	METAL GLAZE	1K	5%	1/16W		R862	1-216-819-11	METAL GLAZE	680	5%	1/16W	
R775	1-216-857-11	METAL GLAZE	1M	5%	1/16W		R863	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R776	1-216-845-11	METAL GLAZE	100K	5%	1/16W		R864	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R777	1-216-817-11	METAL GLAZE	470	5%	1/16W		R865	1-216-832-11	METAL GLAZE	8.2K	5%	1/16W	
R778	1-216-864-11	METAL GLAZE	0	5%	1/16W		R867	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R779	1-216-857-11	METAL GLAZE	1M	5%	1/16W		R868	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R780	1-216-828-11	METAL GLAZE	3.9K	5%	1/16W		R875	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R782	1-216-833-11	METAL GLAZE	10K	5%	1/16W		R876	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R783	1-216-833-11	METAL GLAZE	10K	5%	1/16W		R877	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R784	1-216-015-00	METAL GLAZE	39	5%	1/10W		R878	1-216-812-11	METAL GLAZE	180	5%	1/16W	
R785	1-216-013-00	METAL GLAZE	33	5%	1/10W		R879	1-216-818-11	METAL GLAZE	560	5%	1/16W	
R786	1-216-699-11	METAL CHIP	100K	0.50%	1/10W		R880	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R787	1-216-822-11	METAL GLAZE	1.2K	5%	1/16W		R882	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R788	1-216-839-11	METAL GLAZE	33K	5%	1/16W		R885	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R789	1-216-833-11	METAL GLAZE	10K	5%	1/16W		R886	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R790	1-216-821-11	METAL GLAZE	1K	5%	1/16W		R889	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R791	1-216-836-11	METAL GLAZE	18K	5%	1/16W		R890	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R792	1-216-304-11	METAL GLAZE	3.3	5%	1/10W		R895	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R793	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W		R901	1-216-789-11	METAL GLAZE	2.2	5%	1/16W	
R801	1-216-821-11	METAL GLAZE	1K	5%	1/16W		R902	1-216-789-11	METAL GLAZE	2.2	5%	1/16W	
R804	1-216-811-11	METAL GLAZE	150	5%	1/16W		R906	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R805	1-216-837-11	METAL GLAZE	22K	5%	1/16W		R907	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R806	1-216-821-11	METAL GLAZE	1K	5%	1/16W		R908	1-216-819-11	METAL GLAZE	680	5%	1/16W	
R807	1-216-816-11	METAL GLAZE	390	5%	1/16W		R909	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R808	1-216-864-11	METAL GLAZE	0	5%	1/16W		R911	1-216-841-11	METAL GLAZE	47K	5%	1/16W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
R912	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R913	1-216-861-11	METAL GLAZE 2.2M 5% 1/16W	
R914	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R915	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R916	1-216-849-11	METAL GLAZE 220K 5% 1/16W	
R917	1-216-813-11	METAL GLAZE 220 5% 1/16W	
R918	1-216-813-11	METAL GLAZE 220 5% 1/16W	
R919	1-216-813-11	METAL GLAZE 220 5% 1/16W	
R920	1-216-813-11	METAL GLAZE 220 5% 1/16W	
R931	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R932	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R933	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R934	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R935	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R936	1-216-864-11	METAL GLAZE 0 5% 1/16W	

NETWORK RESISTOR

Ref.No	Part No.	Description	Remark
RB101	1-236-412-11	NETWORK, RES 1.0K	
RB102	1-236-432-11	NETWORK, RES 47K	
RB103	1-236-432-11	NETWORK, RES 47K	
RB104	1-236-424-11	NETWORK, RES 10K	
RB105	1-236-424-11	NETWORK, RES 10K	
RB106	1-236-424-11	NETWORK, RES 10K	
RB107	1-236-424-11	NETWORK, RES 10K	
RB108	1-236-424-11	NETWORK, RES 10K	
RB109	1-236-424-11	NETWORK, RES 10K	
RB110	1-236-424-11	NETWORK, RES 10K	
RB111	1-236-412-11	NETWORK, RES 1.0K	
RB112	1-236-424-11	NETWORK, RES 10K	
RB113	1-236-424-11	NETWORK, RES 10K	
RB115	1-236-412-11	NETWORK, RES 1.0K	
RB116	1-236-412-11	NETWORK, RES 1.0K	
RB117	1-236-412-11	NETWORK, RES 1.0K	
RB118	1-236-412-11	NETWORK, RES 1.0K	
RB119	1-236-412-11	NETWORK, RES 1.0K	
RB120	1-236-412-11	NETWORK, RES 1.0K	
RB121	1-236-412-11	NETWORK, RES 1.0K	
RB122	1-236-424-11	NETWORK, RES 10K	
RB123	1-236-424-11	NETWORK, RES 10K	
RB130	1-236-424-11	NETWORK, RES 10K	
RB131	1-236-424-11	NETWORK, RES 10K	
RB132	1-236-436-11	NETWORK, RES 100K	
RB201	1-236-412-11	NETWORK, RES 1.0K	
RB202	1-236-412-11	NETWORK, RES 1.0K	
RB203	1-236-412-11	NETWORK, RES 1.0K	
RB204	1-236-412-11	NETWORK, RES 1.0K	
RB205	1-236-412-11	NETWORK, RES 1.0K	
RB206	1-236-412-11	NETWORK, RES 1.0K	
RB207	1-236-412-11	NETWORK, RES 1.0K	
RB208	1-236-412-11	NETWORK, RES 1.0K	
RB209	1-236-412-11	NETWORK, RES 1.0K	
RB210	1-236-412-11	NETWORK, RES 1.0K	
RB211	1-236-412-11	NETWORK, RES 1.0K	
RB212	1-236-412-11	NETWORK, RES 1.0K	
RB213	1-236-412-11	NETWORK, RES 1.0K	
RB214	1-236-424-11	NETWORK, RES 10K	
RB215	1-236-424-11	NETWORK, RES 10K	
RB216	1-236-424-11	NETWORK, RES 10K	
RB217	1-236-424-11	NETWORK, RES 10K	
RB218	1-236-424-11	NETWORK, RES 10K	
RB219	1-236-424-11	NETWORK, RES 10K	
RB220	1-236-424-11	NETWORK, RES 10K	
RB221	1-236-424-11	NETWORK, RES 10K	
RB222	1-236-424-11	NETWORK, RES 10K	
RB223	1-236-412-11	NETWORK, RES 1.0K	
RB224	1-236-424-11	NETWORK, RES 10K	
RB225	1-236-412-11	NETWORK, RES 1.0K	
RB227	1-236-412-11	NETWORK, RES 1.0K	
RB801	1-236-412-11	NETWORK, RES 1.0K	
RB802	1-236-412-11	NETWORK, RES 1.0K	
RB803	1-236-412-11	NETWORK, RES 1.0K	
RB804	1-236-412-11	NETWORK, RES 1.0K	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV301	1-238-090-11	RES, ADJ CERMET 10K	
RV401	1-238-087-11	RES, ADJ CERMET 1K	
RV402	1-238-089-11	RES, ADJ CERMET 4.7K	
RV601	1-238-091-11	RES, ADJ CERMET 22K	
RV602	1-238-092-11	RES, ADJ CERMET 47K	
RV603	1-238-089-11	RES, ADJ CERMET 4.7K	
RV604	1-238-088-11	RES, ADJ CERMET 2.2K	
RV605	1-238-088-11	RES, ADJ CERMET 2.2K	
RV651	1-238-087-11	RES, ADJ CERMET 1K	
RV652	1-238-087-11	RES, ADJ CERMET 1K	
RV653	1-238-088-11	RES, ADJ CERMET 2.2K	
RV701	1-238-087-11	RES, ADJ CERMET 1K	
RV741	1-238-090-11	RES, ADJ CERMET 10K	
RV742	1-238-089-11	RES, ADJ CERMET 4.7K	
RV771	1-238-092-11	RES, ADJ CERMET 47K	
RV772	1-238-087-11	RES, ADJ CERMET 1K	
RV802	1-238-087-11	RES, ADJ CERMET 1K	

CRYSTAL

Ref.No	Part No.	Description	Remark
X101	1-527-997-21	VIBRATOR, CRYSTAL	
X102	1-577-118-11	VIBRATOR, LITHIUM NIOBATE	
X201	1-577-349-21	VIBRATOR, CRYSTAL	
X701	1-577-117-21	VIBRATOR, CRYSTAL (4.43MHz)	

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A-7062-436-A CC-55 BOARD, COMPLETE (Ref.No 5,000 Series)
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CAPACITOR

Ref.No	Part No.	Description	Remark
C001	1-162-946-11	CERAMIC CHIP 27PF 5% 50V	
C002	1-162-974-11	CERAMIC CHIP 0.01MF 50V	
C003	1-135-180-21	TANTAL. CHIP 3.3MF 20% 6.3V	

When indicating parts by reference number, please include the board name.

CC-55 RG-22

Ref.No	Part No.	Description		Remark
C004	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C005	1-162-946-11	CERAMIC CHIP 27PF	5%	50V
C006	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C007	1-162-946-11	CERAMIC CHIP 27PF	5%	50V
C008	1-135-180-21	TANTAL. CHIP 3.3MF	20%	6.3V
C009	1-162-946-11	CERAMIC CHIP 27PF	5%	50V
C010	1-164-360-11	CERAMIC CHIP 0.1MF		16V
C011	1-162-946-11	CERAMIC CHIP 27PF	5%	50V
C012	1-162-946-11	CERAMIC CHIP 27PF	5%	50V
C013	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C014	1-162-946-11	CERAMIC CHIP 27PF	5%	50V
C015	1-135-180-21	TANTAL. CHIP 3.3MF	20%	6.3V
C016	1-162-946-11	CERAMIC CHIP 27PF	5%	50V
C017	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C018	1-162-946-11	CERAMIC CHIP 27PF	5%	50V

IC

Ref.No	Part No.	Description
IC001	8-752-333-24	IC CXL1506M

COIL

Ref.No	Part No.	Description
L001	1-410-988-11	INDUCTOR CHIP 0.39UH
L002	1-410-988-11	INDUCTOR CHIP 0.39UH
L003	1-412-031-11	INDUCTOR CHIP 47UH
L004	1-410-988-11	INDUCTOR CHIP 0.39UH
L005	1-410-988-11	INDUCTOR CHIP 0.39UH
L006	1-410-988-11	INDUCTOR CHIP 0.39UH
L007	1-410-988-11	INDUCTOR CHIP 0.39UH
L008	1-412-031-11	INDUCTOR CHIP 47UH
L009	1-410-988-11	INDUCTOR CHIP 0.39UH
L010	1-410-988-11	INDUCTOR CHIP 0.39UH

RESISTOR

Ref.No	Part No.	Description		Remark
R001	1-216-857-11	METAL GLAZE 1M	5%	1/16W
R002	1-216-823-11	METAL GLAZE 1.5K	5%	1/16W
R003	1-216-810-11	METAL GLAZE 120	5%	1/16W
R004	1-216-844-11	METAL GLAZE 82K	5%	1/16W
R005	1-216-823-11	METAL GLAZE 1.5K	5%	1/16W
R006	1-216-864-11	METAL GLAZE 0	5%	1/16W

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*A-7062-437-A RG-22 BOARD, COMPLETE (Ref.No 2,000 Series)
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CAPACITOR

Ref.No	Part No.	Description		Remark
C001	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C002	1-135-151-21	TANTAL. CHIP 4.7MF	20%	4V
C004	1-163-111-00	CERAMIC CHIP 56PF	5%	50V
C005	1-163-117-00	CERAMIC CHIP 100PF	5%	50V
C006	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C007	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V
C008	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C009	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C010	1-126-206-11	ELECT CHIP 100MF	20%	6.3V

Ref.No	Part No.	Description		Remark
C011	1-164-634-11	CERAMIC CHIP 1MF		16V
C012	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C013	1-163-103-00	CERAMIC CHIP 27PF	5%	50V
C014	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C015	1-164-634-11	CERAMIC CHIP 1MF		16V
C017	1-163-241-11	CERAMIC CHIP 39PF	5%	50V
C018	1-163-241-11	CERAMIC CHIP 39PF	5%	50V
C019	1-162-638-11	CERAMIC CHIP 1MF		16V
C020	1-162-638-11	CERAMIC CHIP 1MF		16V
C021	1-163-103-00	CERAMIC CHIP 27PF	5%	50V
C022	1-135-076-21	TANTAL. CHIP 1MF	20%	35V
C023	1-163-125-00	CERAMIC CHIP 220PF	5%	50V
C025	1-163-103-00	CERAMIC CHIP 27PF	5%	50V
C026	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C027	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C028	1-163-241-11	CERAMIC CHIP 39PF	5%	50V
C029	1-135-162-21	TANTAL. CHIP 33MF	20%	6.3V
C030	1-163-105-00	CERAMIC CHIP 33PF	5%	50V
C031	1-162-638-11	CERAMIC CHIP 1MF		16V
C032	1-162-638-11	CERAMIC CHIP 1MF		16V
C034	1-163-103-00	CERAMIC CHIP 27PF	5%	50V
C035	1-163-097-00	CERAMIC CHIP 15PF	5%	50V
C036	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C037	1-163-115-00	CERAMIC CHIP 82PF	5%	50V
C038	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C039	1-163-111-00	CERAMIC CHIP 56PF	5%	50V
C040	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C041	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C042	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C043	1-162-638-11	CERAMIC CHIP 1MF		16V
C044	1-162-638-11	CERAMIC CHIP 1MF		16V
C045	1-162-638-11	CERAMIC CHIP 1MF		16V
C046	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C047	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C048	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C049	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C050	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C051	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C052	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C053	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C054	1-135-156-21	TANTAL. CHIP 6.8MF	20%	10V
C055	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C056	1-135-156-21	TANTAL. CHIP 6.8MF	20%	10V
C057	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C058	1-126-199-11	ELECT CHIP 6.8MF	20%	35V
C059	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C060	1-126-199-11	ELECT CHIP 6.8MF	20%	35V
C061	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C062	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C063	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C064	1-163-139-00	CERAMIC CHIP 820PF	10%	50V
C065	1-163-115-00	CERAMIC CHIP 82PF	5%	50V
C066	1-126-204-11	ELECT CHIP 47MF	20%	16V

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description		Remark
C067	1-135-181-21	TANTAL. CHIP 4.7MF	20%	6.3V
C068	1-126-206-11	ELECT CHIP 100MF	20%	6.3V
C069	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C070	1-164-634-11	CERAMIC CHIP 1MF		16V
C071	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C072	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C073	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C074	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C075	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C076	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C077	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C078	1-164-161-11	CERAMIC CHIP 0.0022MF	10%	50V
C079	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C080	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C081	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C082	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C083	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C084	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C085	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C086	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C803	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C804	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C805	1-163-105-00	CERAMIC CHIP 33PF	5%	50V
C809	1-163-038-00	CERAMIC CHIP 0.1MF		25V

CONNECTOR

CN001	1-565-212-11	CONNECTOR, FPC (ZIF) 26P
CN002	1-568-238-11	CONNECTOR, FPC (1.0MM) (ZIF) 16P
CN501	1-568-235-21	CONNECTOR, FPC (1.0MM) (ZIF) 10P
CN901	1-565-528-11	PIN, CONNECTOR (PC BOARD) 3P

TRIMMER

CV001	1-141-311-11	CAP, CHIP TRIMMER
CV002	1-141-370-11	CAP, CHIP TRIMMER
CV801	1-141-368-11	CAP, CHIP TRIMMER

DIODE

D001	8-719-914-47	DIODE MA152WK

DELAY LINE

DL001	1-415-649-11	DELAY LINE, 1H (ULTRASONIC)

FILTER

FL001	1-236-955-11	FILTER, LOW PASS (Y:PAL)

IC

IC001	8-759-009-07	IC MC14053BF
IC002	8-759-635-37	IC M52003AFP
IC801	8-759-150-07	IC UPD6451AGT-601

COIL

Ref.No	Part No.	Description		Remark
L002	1-410-381-11	INDUCTOR CHIP	10UH	
L003	1-412-029-11	INDUCTOR CHIP	10UH	
L004	1-410-388-21	INDUCTOR CHIP	39UH	
L005	1-410-388-21	INDUCTOR CHIP	39UH	
L006	1-410-386-11	INDUCTOR CHIP	27UH	
L007	1-412-028-11	INDUCTOR CHIP	4.7UH	
L008	1-412-028-11	INDUCTOR CHIP	4.7UH	
L009	1-412-032-11	INDUCTOR CHIP	100UH	
L010	1-412-032-11	INDUCTOR CHIP	100UH	
L011	1-410-383-31	INDUCTOR CHIP	15UH	
L012	1-410-388-21	INDUCTOR CHIP	39UH	
L013	1-412-029-11	INDUCTOR CHIP	10UH	
L801	1-412-066-21	INDUCTOR CHIP	220UH	
L802	1-412-192-11	INDUCTOR	56UH	

TRANSISTOR

Q001	8-729-100-66	TRANSISTOR 2SC1623
Q002	8-729-100-66	TRANSISTOR 2SC1623
Q003	8-729-100-66	TRANSISTOR 2SC1623
Q004	8-729-901-01	TRANSISTOR DTC144EK
Q005	8-729-901-01	TRANSISTOR DTC144EK
Q006	8-729-904-41	TRANSISTOR FMY3
Q007	8-729-904-44	TRANSISTOR FMY4
Q008	8-729-904-41	TRANSISTOR FMY3
Q009	8-729-904-44	TRANSISTOR FMY4
Q010	8-729-904-41	TRANSISTOR FMY3
Q011	8-729-904-44	TRANSISTOR FMY4
Q012	8-729-901-03	TRANSISTOR DTC144WK
Q013	8-729-141-48	TRANSISTOR 2SB624-BV345
Q014	8-729-901-01	TRANSISTOR DTC144EK
Q015	8-729-100-66	TRANSISTOR 2SC1623
Q901	8-729-901-00	TRANSISTOR DTC124EK
Q902	8-729-901-05	TRANSISTOR DTA124EK

RESISTOR

R001	1-216-748-11	METAL GLAZE	39K	5%	1/10W
R002	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R003	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R004	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R005	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R006	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R007	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R008	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R009	1-216-295-00	METAL GLAZE	0	5%	1/10W
R010	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W
R011	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R012	1-216-079-00	METAL GLAZE	18K	5%	1/10W
R013	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R014	1-216-683-11	METAL CHIP	22K	0.50%	1/10W
R015	1-216-689-11	METAL CHIP	39K	0.50%	1/10W
R016	1-216-038-00	METAL GLAZE	360	5%	1/10W
R017	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R018	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W
R019	1-216-066-00	METAL GLAZE	5.1K	5%	1/10W

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description				Remark
R020	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R021	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R023	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R024	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R025	1-216-104-00	METAL GLAZE	200K	5%	1/10W	
R027	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R028	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R029	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R030	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R031	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R032	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R033	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R034	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R035	1-216-748-11	METAL GLAZE	39K	5%	1/10W	
R036	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R037	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R038	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R039	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R040	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R041	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R043	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R044	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R045	1-216-542-11	METAL GLAZE	12K	1%	1/10W	
R046	1-216-333-11	METAL GLAZE	15K	1%	1/10W	
R047	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R048	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R049	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R050	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R051	1-216-748-11	METAL GLAZE	39K	5%	1/10W	
R052	1-216-031-00	METAL GLAZE	180	5%	1/10W	
R054	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R055	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R056	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R057	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R059	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R060	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R061	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R062	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R063	1-216-090-00	METAL GLAZE	51K	5%	1/10W	
R064	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R065	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R066	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R067	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R068	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R069	1-216-332-11	METAL GLAZE	11K	1%	1/10W	
R070	1-216-747-11	METAL GLAZE	33K	1%	1/10W	
R072	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R073	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R076	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R077	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R078	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R079	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R080	1-216-089-00	METAL GLAZE	47K	5%	1/10W	

Ref.No	Part No.	Description				Remark
R081	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R084	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R085	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R086	1-216-748-11	METAL GLAZE	39K	5%	1/10W	
R087	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R501	1-216-095-00	METAL GLAZE	82K	5%	1/10W	
R502	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R503	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R504	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R505	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R506	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R507	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R801	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R802	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R803	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R804	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R805	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R806	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R807	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R808	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R809	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R810	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R811	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R812	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R901	1-216-049-00	METAL GLAZE	1K	5%	1/10W	

VARIABLE RESISTOR

RV001	1-241-118-11	RES, VAR, CARBON 20K
RV002	1-238-088-11	RES, ADJ, CERMET 2.2K
RV003	1-238-092-11	RES, ADJ CERMET 47K
RV004	1-241-006-11	RES, VAR, CARBON 50K
RV005	1-238-092-11	RES, ADJ CERMET 47K
RV006	1-238-092-11	RES, ADJ CERMET 47K
RV007	1-238-092-11	RES, ADJ CERMET 47K
RV008	1-238-092-11	RES, ADJ CERMET 47K
RV009	1-238-092-11	RES, ADJ CERMET 47K
RV601	1-241-029-11	RES, VAR, CARBON 2K/2K

SWITCH

SW601	1-570-386-21	SWITCH, SLIDE (DBB)

COIL

T001	1-459-949-11	COIL

CRYSTAL

X001	1-567-504-81	OSCILLATOR, CRYSTAL (4.43MHz)

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When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description		Remark
	*A-7062-438-A	TU-126 BOARD, COMPLETE (Ref.No 6,000 Series) ************************		
	3-744-166-01	HOLDER, ANTENNA		
	3-746-907-01	LID, TDD SHIELD CASE		
	3-746-908-01	LID, REAR, TDD SHIELD CASE		
	3-746-915-01	LID, REAR, TU SHIELD CASE		

CAPACITOR

Ref.No	Part No.	Description		Remark
C001	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C002	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C004	1-164-005-11	CERAMIC CHIP 0.47MF		25V
C005	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C006	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C007	1-164-005-11	CERAMIC CHIP 0.47MF		25V
C008	1-164-005-11	CERAMIC CHIP 0.47MF		25V
C009	1-126-205-11	ELECT CHIP 47MF	20%	6.3V
C010	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C011	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C012	1-163-090-00	CERAMIC CHIP 7PF	0.25PF	50V
C013	1-163-090-00	CERAMIC CHIP 7PF	0.25PF	50V
C014	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V
C018	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V
C019	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V
C020	1-135-217-21	TANTAL. CHIP 15MF	20%	6.3V
C021	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V
C022	1-135-181-21	TANTAL. CHIP 4.7MF	20%	6.3V
C023	1-164-222-11	CERAMIC CHIP 0.22MF		25V
C024	1-164-336-11	CERAMIC CHIP 0.33MF		25V
C025	1-135-149-21	TANTAL. CHIP 2.2MF	20%	10V
C026	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V
C027	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C028	1-163-095-00	CERAMIC CHIP 12PF	5%	50V
C029	1-126-206-11	ELECT CHIP 100MF	20%	6.3V
C030	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C031	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C032	1-135-149-21	TANTAL. CHIP 2.2MF	20%	10V
C033	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C034	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C035	1-163-105-00	CERAMIC CHIP 33PF	5%	50V
C036	1-163-036-00	CERAMIC CHIP 0.068MF		50V
C037	1-163-036-00	CERAMIC CHIP 0.068MF		50V
C038	1-163-036-00	CERAMIC CHIP 0.068MF		50V
C039	1-163-121-00	CERAMIC CHIP 150PF	5%	50V
C040	1-163-095-00	CERAMIC CHIP 12PF	5%	50V
C041	1-163-037-11	CERAMIC CHIP 0.022MF	10%	25V
C042	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V
C044	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C045	1-163-037-11	CERAMIC CHIP 0.022MF	10%	25V
C046	1-135-181-21	TANTAL. CHIP 4.7MF	20%	6.3V
C047	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V
C048	1-163-115-00	CERAMIC CHIP 82PF	5%	50V
C049	1-163-099-00	CERAMIC CHIP 18PF	5%	50V
C050	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C051	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V
C054	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C058	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V
C059	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C060	1-135-217-21	TANTAL. CHIP 15MF	20%	6.3V
C061	1-163-016-00	CERAMIC CHIP 0.0039MF	10%	50V
C062	1-163-101-00	CERAMIC CHIP 22PF	5%	50V
C063	1-163-101-00	CERAMIC CHIP 22PF	5%	50V
C065	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C066	1-126-206-11	ELECT CHIP 100MF	20%	6.3V
C070	1-164-005-11	CERAMIC CHIP 0.47MF		25V
C071	1-163-019-00	CERAMIC CHIP 0.0068MF	10%	50V
C072	1-163-011-11	CERAMIC CHIP 0.0015MF	10%	50V
C073	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C101	1-135-149-21	TANTAL. CHIP 2.2MF	20%	10V
C501	1-164-161-11	CERAMIC CHIP 0.0022MF	10%	50V
C502	1-163-133-00	CERAMIC CHIP 470PF	5%	50V
C503	1-135-217-21	TANTAL. CHIP 15MF	20%	6.3V
C504	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C505	1-163-011-11	CERAMIC CHIP 0.0015MF	10%	50V
C506	1-126-204-11	ELECT CHIP 47MF	20%	16V
C507	1-135-156-21	TANTAL. CHIP 6.8MF	20%	10V
C508	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C509	1-124-779-00	ELECT CHIP 10MF	20%	16V
C510	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C511	1-126-200-11	ELECT CHIP 10MF	20%	35V
C512	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C513	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C514	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C515	1-135-156-21	TANTAL. CHIP 6.8MF	20%	10V
C516	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C517	1-135-153-21	TANTAL. CHIP 2.2MF	20%	25V
C518	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C520	1-126-602-11	ELECT CHIP 3.3MF	20%	50V
C521	1-163-036-00	CERAMIC CHIP 0.068MF		50V
C522	1-135-155-21	TANTAL. CHIP 4.7MF	20%	16V
C524	1-163-117-00	CERAMIC CHIP 100PF	5%	50V
C525	1-163-117-00	CERAMIC CHIP 100PF	5%	50V
C526	1-163-117-00	CERAMIC CHIP 100PF	5%	50V
C527	1-163-037-11	CERAMIC CHIP 0.022MF	10%	25V

FILTER

Ref.No	Part No.	Description
CF051	1-577-560-11	FILTER, CERAMIC
CF052	1-579-217-11	DISCRIMINATOR, CERAMIC
CF053	1-409-478-11	FILTER, TRAP (CERAMIC)
CF061	1-577-561-11	FILTER, CERAMIC
CF062	1-579-218-11	DISCRIMINATOR, CERAMIC

CONNECTOR

Ref.No	Part No.	Description
CN001	1-569-634-41	CONNECTOR, BOARD TO BOARD 30P
CN002	1-566-523-11	CONNECTOR, FPC (ZIF) 7P
CN003	*1-565-541-11	PIN, CONNECTOR (PC BOARD) 2P

When indicating parts by reference number, please include the board name.

TU-126

Ref.No	Part No.	Description	Remark
		DIODE	
D001	8-719-801-50	DIODE MA152WK	
D501	8-719-801-50	DIODE MA152WK	
D502	8-719-801-50	DIODE MA152WK	
D503	8-719-801-50	DIODE MA152WK	
D504	8-719-801-50	DIODE MA152WK	
D601	8-719-106-44	DIODE RD9.1M-B2	
		INDUCTOR CHIP	
FB501	1-412-390-21	INDUCTOR CHIP OUH	
FB502	1-412-390-21	INDUCTOR CHIP OUH	
		IC	
IC001	8-759-504-59	IC TDA3842T-T	
IC002	8-759-634-94	IC M52018FP	
IC005	8-759-998-92	IC LM393D	
IC501	⚠8-759-500-70	IC FA7610N	
IC502	8-759-157-40	IC UPC574J	
		AMPLIFIER	
IU001	⚠1-466-330-11	AMPLIFIER, ISOLATION (RA-1)	
		JACK	
J001	1-507-921-00	JACK	
J601	1-563-282-21	JACK, SMALL TYPE	
J602	1-563-282-21	JACK, SMALL TYPE	
		COIL	
L002	1-410-987-11	INDUCTOR CHIP 0.33UH	
L004	1-412-029-11	INDUCTOR CHIP 10UH	
L005	1-412-031-11	INDUCTOR CHIP 47UH	
L006	1-410-377-31	INDUCTOR CHIP 4.7UH	
L007	1-410-380-31	INDUCTOR CHIP 8.2UH	
L008	1-410-393-11	INDUCTOR CHIP 100UH	
L051	1-410-992-11	INDUCTOR CHIP 0.82UH	
L052	1-412-029-11	INDUCTOR CHIP 10UH	
L053	1-412-029-11	INDUCTOR CHIP 10UH	
L501	1-412-028-11	INDUCTOR CHIP 4.7UH	
L502	1-412-028-11	INDUCTOR CHIP 4.7UH	
L503	1-412-028-11	INDUCTOR CHIP 4.7UH	
L505	1-412-030-11	INDUCTOR CHIP 22UH	
		TRANSISTOR	
Q001	8-729-230-XX	TRANSISTOR 2SC26690Y	
Q002	8-729-100-66	TRANSISTOR 2SC1623	
Q003	8-729-901-47	TRANSISTOR DTA143EK	
Q004	8-729-901-47	TRANSISTOR DTA143EK	
Q005	8-729-901-47	TRANSISTOR DTA143EK	
Q006	8-729-901-01	TRANSISTOR DTC144EK	
Q007	8-729-901-01	TRANSISTOR DTC144EK	
Q008	8-729-216-22	TRANSISTOR 2SA1162	
Q009	8-729-100-66	TRANSISTOR 2SC1623	
Q010	8-729-216-22	TRANSISTOR 2SA1162	
Q011	8-729-100-66	TRANSISTOR 2SC1623	
Q012	8-729-901-01	TRANSISTOR DTC144EK	
Q013	8-729-901-01	TRANSISTOR DTC144EK	
Q014	8-729-901-01	TRANSISTOR DTC144EK	
Q015	8-729-100-66	TRANSISTOR 2SC1623	
Q016	8-729-100-66	TRANSISTOR 2SC1623	
Q501	⚠8-729-421-15	TRANSISTOR 2SD1119-Q	
Q502	8-729-901-06	TRANSISTOR DTA144EK	
Q503	8-729-901-01	TRANSISTOR DTC144EK	
Q504	8-729-601-58	TRANSISTOR 2SC3053-C	
		RESISTOR	
R002	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R003	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R006	1-216-021-00	METAL GLAZE 68 5% 1/10W	
R007	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R008	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
R009	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R010	1-216-019-00	METAL GLAZE 56 5% 1/10W	
R011	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R012	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R013	1-216-017-00	METAL GLAZE 47 5% 1/10W	
R014	1-216-063-00	METAL GLAZE 3.9K 5% 1/10W	
R015	1-216-045-00	METAL GLAZE 680 5% 1/10W	
R016	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R017	1-216-037-00	METAL GLAZE 330 5% 1/10W	
R018	1-216-021-00	METAL GLAZE 68 5% 1/10W	
R019	1-216-029-00	METAL GLAZE 150 5% 1/10W	
R020	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
R021	1-216-021-00	METAL GLAZE 68 5% 1/10W	
R022	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R023	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R026	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R027	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R028	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R029	1-216-109-00	METAL GLAZE 330K 5% 1/10W	
R031	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R032	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R033	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R034	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R035	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R036	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
R038	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R039	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R040	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R041	1-216-063-00	METAL GLAZE 3.9K 5% 1/10W	
R042	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
R043	1-216-091-00	METAL GLAZE 56K 5% 1/10W	
R044	1-216-091-00	METAL GLAZE 56K 5% 1/10W	
R045	1-216-079-00	METAL GLAZE 18K 5% 1/10W	
R046	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R047	1-216-079-00	METAL GLAZE 18K 5% 1/10W	

When indicating parts by reference number, please include the board name.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref.No	Part No.	Description	Remark
R048	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R049	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R051	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R056	1-216-037-00	METAL GLAZE 330 5% 1/10W	
R057	1-216-035-00	METAL GLAZE 270 5% 1/10W	
R058	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R059	1-216-017-00	METAL GLAZE 47 5% 1/10W	
R060	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R068	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R069	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R070	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R071	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R072	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R073	1-216-075-00	METAL GLAZE 12K 5% 1/10W	
R075	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R101	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R102	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R104	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R105	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R106	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R107	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R108	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R109	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R111	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R501	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W	
R502	1-216-091-00	METAL GLAZE 56K 5% 1/10W	
R503	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	
R504	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R505	1-216-117-00	METAL GLAZE 680K 5% 1/10W	
R506	1-216-748-11	METAL GLAZE 39K 5% 1/10W	
R507	1-216-103-00	METAL GLAZE 180K 5% 1/10W	
R508	1-216-001-00	METAL GLAZE 10 5% 1/10W	
R509	1-216-105-00	METAL GLAZE 220K 5% 1/10W	
R511	1-216-009-00	METAL GLAZE 22 5% 1/10W	
R512	1-216-043-00	METAL GLAZE 560 5% 1/10W	
R513	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R514	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R516	1-216-043-00	METAL GLAZE 560 5% 1/10W	
R517	1-216-043-00	METAL GLAZE 560 5% 1/10W	
R518	1-216-043-00	METAL GLAZE 560 5% 1/10W	
R520	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W	
R521	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R601	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R602	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R603	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R604	1-216-025-00	METAL GLAZE 100 5% 1/10W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV101	1-238-087-11	RES, ADJ CERMET 1K	
RV501	1-238-087-11	RES, ADJ CERMET 1K	

FILTER

Ref.No	Part No.	Description	Remark
SWF001	1-579-170-11	FILTER, SAW	
SWF002	1-579-169-11	FILTER, SAW	

TRANSFORMER

Ref.No	Part No.	Description	Remark
T001	1-460-079-11	COIL	
T002	1-460-078-11	COIL	
T004	1-460-078-11	COIL	
T101	1-460-078-11	COIL	
T501	1-450-107-11	TRANSFORMER, DC-DC CONVERTER	

TUNER

Ref.No	Part No.	Description	Remark
TU001	⚠1-465-569-11	TUNER, ET (BT-KG301)	

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*1-634-347-11 UC-6 BOARD (Ref.No 4,000 Series)
****

*3-746-939-01 INSULATOR, UC

CONNECTOR

Ref.No	Part No.	Description	Remark
CN001	1-566-529-11	CONNECTOR, FPC (ZIF) 13P	
CN002	1-566-527-11	CONNECTOR, FPC (ZIF) 11P	
CN003	1-566-547-11	CONNECTOR, FPC (NON ZIF) 15P	

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*A-7071-287-A **KB-10P** BOARD, COMPLETE (Ref.No 4,000 Series)
****

*3-744-130-01 HOLDER (PC), LED

CONNECTOR

Ref.No	Part No.	Description	Remark
CN802	1-566-760-11	PIN, CONNECTOR (PC BOARD) 5P	

DIODE

Ref.No	Part No.	Description	Remark
D801	8-719-937-45	DIODE GL-1EG101	
D803	8-719-975-81	DIODE GL1PR111	
D804	8-719-975-81	DIODE GL1PR111	
D805	8-719-975-81	DIODE GL1PR111	
D806	8-719-970-14	DIODE GL1HY111	
D808	8-719-951-22	DIODE IMN10T108	
D809	8-719-951-22	DIODE IMN10T108	
D810	8-719-104-34	DIODE 1S2835-T1	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q801	8-729-403-24	TRANSISTOR XN4210-TW	
Q802	8-729-403-24	TRANSISTOR XN4210-TW	
Q803	8-729-403-24	TRANSISTOR XN4210-TW	
Q804	8-729-920-48	TRANSISTOR IMH2-T110	

RESISTOR

Ref.No	Part No.	Description	Remark
R801	1-216-033-00	METAL GLAZE 220 5% 1/10W	

When indicating parts by reference number, please include the board name.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

KB-10P DC-22P CN-6P SB-3P

Ref.No	Part No.	Description	Remark
R803	1-216-037-00	METAL GLAZE 330 5% 1/10W	
R804	1-216-037-00	METAL GLAZE 330 5% 1/10W	
R805	1-216-037-00	METAL GLAZE 330 5% 1/10W	
R806	1-216-035-00	METAL GLAZE 270 5% 1/10W	
R808	1-216-075-00	METAL GLAZE 12K 5% 1/10W	

SWITCH

Ref.No	Part No.	Description	Remark
S801	1-572-344-11	SWITCH, SLIDE (POWER)	
S802	1-572-078-11	SWITCH, TACTILE (CH -)	
S803	1-572-078-11	SWITCH, TACTILE (CH +)	
S805	1-571-102-11	SWITCH, SLIDE (EJECT)	
S806	1-572-078-11	SWITCH, TACTILE (REW)	
S807	1-572-078-11	SWITCH, TACTILE (FF)	
S808	1-572-078-11	SWITCH, TACTILE (PB)	
S809	1-572-078-11	SWITCH, TACTILE (STOP)	
S810	1-572-078-11	SWITCH, TACTILE (PAUSE)	
S811	1-571-102-11	SWITCH, SLIDE (REC)	
S812	1-572-078-11	SWITCH, TACTILE (SLOW)	

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*A-7071-288-A DC-22P BOARD, COMPLETE (Ref.No 4,000 Series)
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Ref.No	Part No.	Description	Remark
	*3-744-170-01	HOLDER, DC	
	3-746-959-01	SPACER, DC	

JACK

Ref.No	Part No.	Description	Remark
J702	1-537-241-11	TERMINAL BOARD (BATTERY)	

IC LINK

Ref.No	Part No.	Description	Remark
PS701	⚠1-532-840-21	LINK, IC	
PS702	⚠1-532-840-21	LINK, IC	
PS703	⚠1-532-840-21	LINK, IC	
PS704	⚠1-532-840-21	LINK, IC	
PS705	⚠1-532-840-21	LINK, IC	
PS706	⚠1-532-840-21	LINK, IC	

FLAT CABLE

Ref.No	Part No.	Description	Remark
W701	1-575-823-11	CABLE, FLAT (1.0MM PITCH) 16P	

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*A-7071-289-A CN-6P BOARD, COMPLETE (Ref.No 3,000 Series)
****

CONNECTOR

Ref.No	Part No.	Description	Remark
CN601	1-566-544-41	CONNECTOR, FPC (NON ZIF) 12P	
CN602	1-565-527-11	PIN, CONNECTOR (PC BOARD) 2P	

DIODE

Ref.No	Part No.	Description	Remark
D602	8-719-106-43	DIODE RD9.1M-T1B1	
D603	8-719-106-43	DIODE RD9.1M-T1B1	
D604	8-719-106-43	DIODE RD9.1M-T1B1	
D605	8-719-106-43	DIODE RD9.1M-T1B1	
D606	8-719-106-43	DIODE RD9.1M-T1B1	
D608	8-719-106-43	DIODE RD9.1M-T1B1	

JACK

Ref.No	Part No.	Description	Remark
J601	1-562-952-11	CONNECTOR 12P	

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*A-7071-290-A SB-3P BOARD, COMPLETE (Ref.No 6,000 Series)
****

CONNECTOR

Ref.No	Part No.	Description	Remark
CN901	1-566-539-11	CONNECTOR, FPC (NON ZIF) 7P	

RESISTOR

Ref.No	Part No.	Description	Remark
R901	1-216-075-00	METAL GLAZE 12K 5% 1/10W	
R903	1-216-075-00	METAL GLAZE 12K 5% 1/10W	
R904	1-216-079-00	METAL GLAZE 18K 5% 1/10W	
R906	1-216-075-00	METAL GLAZE 12K 5% 1/10W	
R907	1-216-079-00	METAL GLAZE 18K 5% 1/10W	
R908	1-216-085-00	METAL GLAZE 33K 5% 1/10W	

SWITCH

Ref.No	Part No.	Description	Remark
S901	1-572-078-11	SWITCH, TACTILE (LINE AUDIO SELECT)	
S902	1-572-078-11	SWITCH, TACTILE (MAIN/SUB)	
S904	1-572-078-11	SWITCH, TACTILE (TV SYSTEM)	
S905	1-572-078-11	SWITCH, TACTILE (SP/LP)	
S906	1-572-078-11	SWITCH, TACTILE (CLEAR)	
S907	1-572-078-11	SWITCH, TACTILE (POSITION)	
S908	1-572-078-11	SWITCH, TACTILE (PRESET)	
S909	1-572-078-11	SWITCH, TACTILE (SEEK)	
S910	1-572-078-11	SWITCH, TACTILE (INPUT SEL)	

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MISCELLANEOUS
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Ref.No	Part No.	Description	Remark
	⚠1-466-333-11	INVERTER UNIT, DC-AC	
	1-466-334-11	SWITCH BLOCK, CONTROL	
	1-501-456-11	ANTENNA, TELESCOPIC	
	1-544-323-11	SPEAKER	
	1-569-346-11	CONNECTOR, FPC (TRANSLATION) 10P	
	1-569-347-11	CONNECTOR, FPC (TRANSLATION) 13P	
	1-572-253-11	SWITCH, SLIDE (ENCODER)	
	1-575-856-11	CABLE, FLAT (1.0MM PITCH) 7 CORE	
	1-575-857-11	CABLE, FLAT (1.0MM PITCH) 12 CORE	
	1-575-858-11	CABLE, FLAT (1.0MM PITCH) 16 CORE	
	1-575-859-11	CABLE, FLAT (1.0MM PITCH) 15 CORE	
	1-628-060-12	FP-89 FLEXIBLE BOARD	
	1-628-061-12	FP-90 FLEXIBLE BOARD	
	1-634-994-11	FP-271 FLEXIBLE BOARD	
	1-634-995-11	FP-272 FLEXIBLE BOARD	

When indicating parts by reference number, please include the board name.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref.No	Part No.	Description	Remark
	1-634-996-11	FP-273 FLEXIBLE BOARD	
	1-634-997-11	FP-274 FLEXIBLE BOARD	
	1-808-505-12	SENSOR (DEW)	
BL901	1-518-668-11	TUBE UNIT, FLUORECENT	
D301	8-719-820-44	PHOTO COUPLER TLP907-0 (SONY2)	
D302	8-719-940-81	DIODE GL452S	
D303	8-719-820-44	PHOTO COUPLER TLP907-0 (SONY2)	
LCD901	1-809-002-12	DISPLAY MODULE, LIQUID CRYSTAL	
M902	8-835-331-01	MOTOR, DC U-22A (CAPSTAN)	
M903	A-7040-208-A	MOTOR ASSY, THREADING (LOADING)	
Q301	8-729-906-48	EE-TP109	
Q302	8-729-906-48	EE-TP109	
S302	1-572-298-11	SWITCH, PUSH (ME/MP, MP HG, REC PROOF)	
S901	1-571-099-11	SWITCH (CASSETTE DOWN)	

* * *

ACCESSORIES AND PACKING MATERIALS

Part No.	Description	Remark
1-417-176-11	DISTRIBUTOR, ANTENNA (GERMANY MODEL)	
⚠.1-528-174-31	BATTERY, LITHIUM (CR2032 TYPE)	
1-574-517-11	CORD, CONNECTION	
2-366-919-00	BAG, PROTECTION	
3-728-996-01	CASE, SOFT	
*3-744-184-01	CUSHION (UPPER)	
*3-744-185-01	CUSHION (LOWER)	
3-751-853-11	MANUAL, INSTRUCTION (ENGLISH) (AEP/UK MODEL)	
3-751-853-41	MANUAL, INSTRUCTION (GERMAN/FRENCH/SPANISH) (AEP MODEL)	
3-751-853-51	MANUAL, INSTRUCTION (DUTCH/SWEDISH/ITALIAN) (AEP NODEL)	
3-751-853-61	MANUAL, INSTRUCTION (GERMAN) (GERMANY MODEL)	

**** ACCESSORIES AND PACKING MATERIALS (KIT) ****

	*3-749-784-01	CUSHION (UPPER), ACC
	*3-749-785-01	CUSHION (LOWER), ACC
**	AC-V30	AC POWER ADAPTOR
***	NP-66H	BATTERY PACK (AEP MODEL)
***	MDR-E454	HEAD PHONE

Note

** MARK PARTS IS AVAILABLE FOR REPAIR SERVICE.
*** MARK PARTS IS AVAILABLE AS AN OPTIONAL ACCESSORY.

* * *

Ref.No	Part No.	Description	Remark

HARDWARE LIST

SCREW

Part No.	Description
7-627-553-18	SCREW, PRECISION +P 2X2
7-627-555-88	SCREW, PRECISION +P 1.4X1.8
7-627-652-08	SCREW, PRECISION +RK 2X2.5
7-627-553-37	SCREW, PRECISION +P 2X3 TYPE 3
7-627-553-68	SCREW, PRECISION +P 2X6 TYPE3

NUT

Part No.	Description
7-684-023-04	N 3, TYPE 2

WASHER

Part No.	Description
7-623-208-22	SW 3, TYPE 2
7-688-003-01	W 3, SMALL

* * *

When indicating parts by reference number, please include the board name.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

SECTION 7
MECHANICAL ADJUSTMENTS

For Mechanical Adjustments
Refer to mechanical adjustment (8 mm Video MECHANICAL ADJUSTMENT MANUAL III) manual for the adjustments and checks of mechanism section and the mechanical parts replacement. (9-972-732-11)
For setting of the track shift mode, however, refer to the following.

7-1. SETTING THE TRACK SHIFT MODE

[Setting Method]

1) Setting the test mode* 0011 (Jig switching position 3)

CN802

1	TEST B
2	GND
3	TEST A
4	TEST C
5	TEST D

Jig switching position 3

*Refer to「8-1-7. Test mode」.

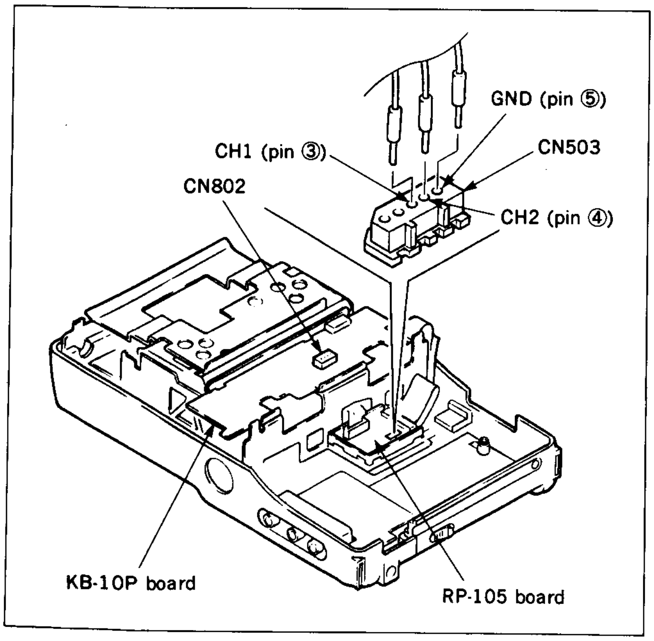


Fig. 7-1.

7-2. PREPARATION FOR ADJUSTMENT

1) Clean the tape running surfaces (tape guide, drum, capstan shaft, pinch roller.)
2) Connect to the oscilloscope.
   CH1 : RP-105 board CN503 pin ③ (PB RF)
   CH2 : RP-105 board CN503 pin ④ (SWP)
3) Play back the tracking alignment tape (WR5-1CP) (8-967-995-07).
4) Check that the RF waveform of the oscilloscope is flat at both inlet and outlet sides. When not flat, make adjustment as follows. (Refer to mechanical adjustment manual.)

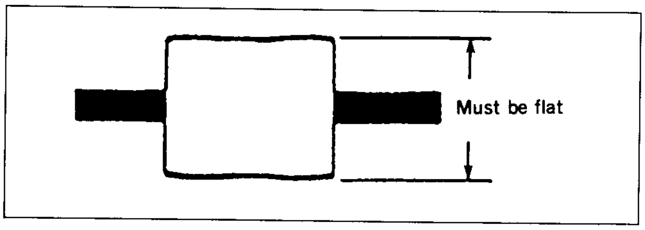


Fig. 7-2.

SECTION 8
ELECTRICAL ADJUSTMENTS

See the adjusting parts location diagram from on page 174 for the adjustment.

8-1. PREPARATION FOR ADJUSTMENT

The following measurement instruments are used for the electric adjustment.

8-1-1. Using Instruments

1) Monitor TV
2) Oscilloscope having two phenomena, band of 10MHz or more, and the delay mode.
3) Frequency counter
4) Pattern generator (having the video output terminal)
5) Digital voltmeter
6) Audio generator
7) Audio level meter
8) Audio distortion rate meter
9) Audio attenuator
10) Stabilized power source
11) Alignment tape
    - For tracking adjustment
      (WR5-1CP) Part code: 8-967-995-07
    - For checking of SP mode operation
      (WR5-5CSP) Part code: 8-967-995-47
      (WR5-4CSP) Part code: 8-967-995-46
    - For checking of LP mode operation
      (WR5-4CL) Part code: 8-967-995-56
    - For checking of AFM stereo operation
      (WR5-9CS) Part code: 8-967-995-28
    - For video frequency characteristic adjustment
      (WR5-6C) Part code: 8-967-995-17
12) Extension harness
    Between AU-98 board CN101 and SV-66 board CN005 J-6082-111-A
    Between AU-98 board CN102 and SV-66 board CN006 J-6082-112-A
    Between RG-22 board CN001 and SV-66 board CN004 J-6082-113-A
13) COMMON voltage adjustment jig (J-6082-024-A)

8-1-2. Connection of Instruments

If there is no special direction, connect the measuring instruments as shown in the following figure and perform the adjustment.

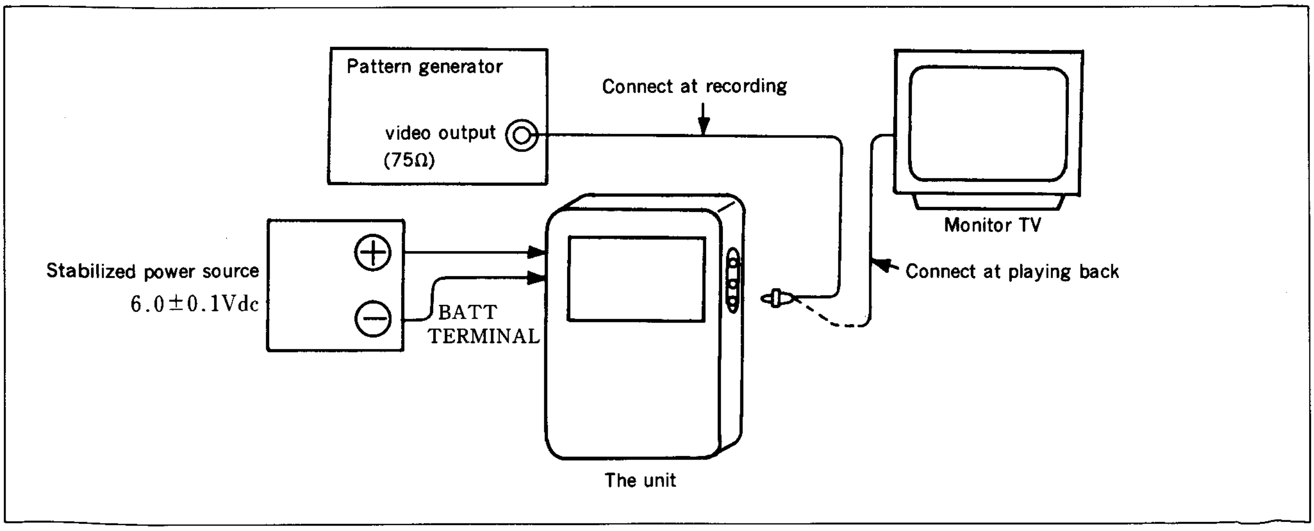

Pattern generator
video output
(75Ω)
Connect at recording
Monitor TV
Stabilized power source
6.0±0.1Vdc
BATT
TERMINAL
Connect at playing back
The unit

Fig. 8-1.

8-1-3. VIDEO/AUDIO Terminal of the Unit

The VIDEO/AUDIO (L/R) terminal of the unit has the function of both input and output. The operation as the input terminal or as the output terminal is automatically selected according to the operating condition of the unit.
When connecting with the other instruments, perform the connection according to the input-output of the terminal.

The operation condition of the unit and the automatic input-output selection of the terminal.

Input mode selected with the INPUT SELECT button	The case that the unit is stopped or the recording mode is selected.	The case that the unit is set to the playback mode.
TUNER (television screen)	Output	Output
LINE*	Input	Output
CAMERA	Output	Output

* When the LINE is selected with the INPUT SELECT button, the display of INPUT or OUTPUT is shown according to the operation condition.

8-1-4. Set-up at the Adjustment

As the video signal obtained from the pattern generator is used as the adjustment signal for adjusting, it is required that the video output signal satisfies the specified value. Connect the pattern generator and the oscilloscope with the VIDEO input-output terminal. Check that the amplitude of the synchronous signal of the video signal is approximately 0.3V, the amplitude of the picture part is approximately 0.7V, the amplitude of the burst signal is approximately 0.3V and is flat, and the level proportion of the burst signal and the red signal is 0.30 : 0.66.

The video signal (color bar) used for the adjustment is shown in the Fig. 8-2.

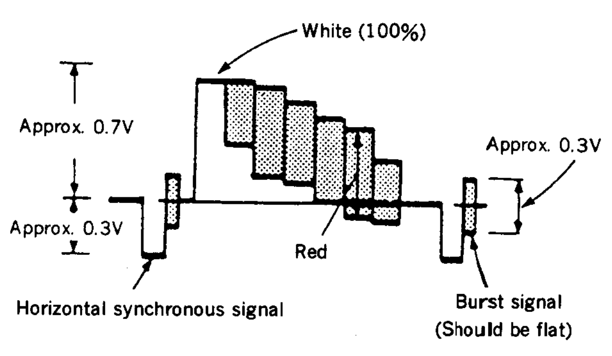


Fig. 8-2. Color bar signal of the pattern generator

8-1-5. Alignment Tape

The following tapes are prepared for the alignment tape. Use the tape designated in the signal column of each adjustment.

Name	Recording mode	Type of tape	Speed of tape	Recording contents		Usage
				Video area	PCM area	
Tracking WR5-1CP	L	MP	SP	CH2 : 1MHz Signal for tape pass adjustment Marker for switching position adjustment(CH1 : 9MHz)		Tape pass adjustment Switching position adjustment
Video frequency characteristic WR5-6C	L	MP	SP	RF sweep 0~15MHz Marker 1, 3.58, 5.5, 7MHz		Frequency characteristic adjustment
Checking operation WR5-4CSP or WR5-5CSP	L	MP	SP	● Video signal Color bar 4 minutes Monoscope 4 minutes ● Audio signal (AFM) 400Hz 60% modulation	● Audio signal (PCM) monoscope part 20Hz, 20sec. 400Hz, 20sec. 14kHz, 20sec. } Repeat four times Color bar part 1kHz 4 minutes	Checking operation
WR5-4CL	L	MP	LP	● Video signal Color bar 4 minutes monoscope 4 minutes ● Audio signal (AFM) 400Hz 60% modulation		
AFM stereo checking operation WR5-9CS	L	MP	SP	● Video signal Color bar 4 minutes 400Hz 8minutes ● Audio signal (AFM) • Color bar part Lch : 400Hz L+R (1.5MHz±60kHz) Rch : 1kHz L−R (1.7MHz±30kHz) • monoscope part DEV+Bilingual (Including a RF ID signal.)	● Audio signal (PCM) 400Hz 8minutes	AFM stereo PB matrix adjustment

Note: Recording mode
L·········Normal mode

Types of tape
MP·········Application type metal tape

Table. 8-1.

The color bar signal recorded in the alignment tape is shown in the Fig.8-3.

Note : Measure with the VIDEO INPUT-OUTPUT terminal (75Ω terminal) playback mode.

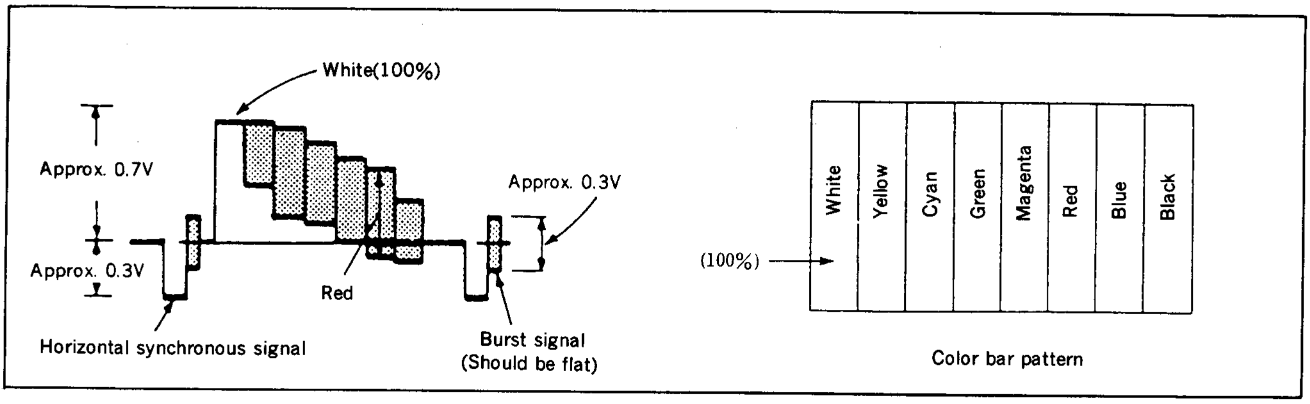

White(100%)
Approx. 0.7V
Approx. 0.3V
Approx. 0.3V
Red
Horizontal synchronous signal
Burst signal
(Should be flat)
(100%)
White
Yellow
Cyan
Green
Magenta
Red
Blue
Black
Color bar pattern

Fig.8-3. Color bar signal of the alignment tape

8-1-6. Input/Output Level and Impedance

VIDEO/AUDIO (L/R) Input-output terminal (phono jack)

VIDEO input	Input signal: 1Vp-p, 75Ω unbalance, Synchronous negative
VIDEO output	Output signal: 1Vp-p, 75Ω unbalance, Synchronous negative
AUDIO input	Input level: -7.5dBs(0dBs=0.775Vrms) Input impedance: 47kΩ or more
AUDIO output	Specified output: −7.5dBs Output impedance: 10kΩ or less

8-1-7. TEST MODE

Use CN802 on the KB-10P board.

CN802 pin position

1	TEST B
2	GND
3	TEST A
4	TEST C
5	TEST D

When each terminal of the TEST A, B, C and D is shortened and opened, twelve types of TEST MODE are selected.

When servicing, attaching the “test mode set jig” (J-6082-110-A) to CN802 allows to select twelve types of test mode with the hexadecimal selecting switches of the jig.

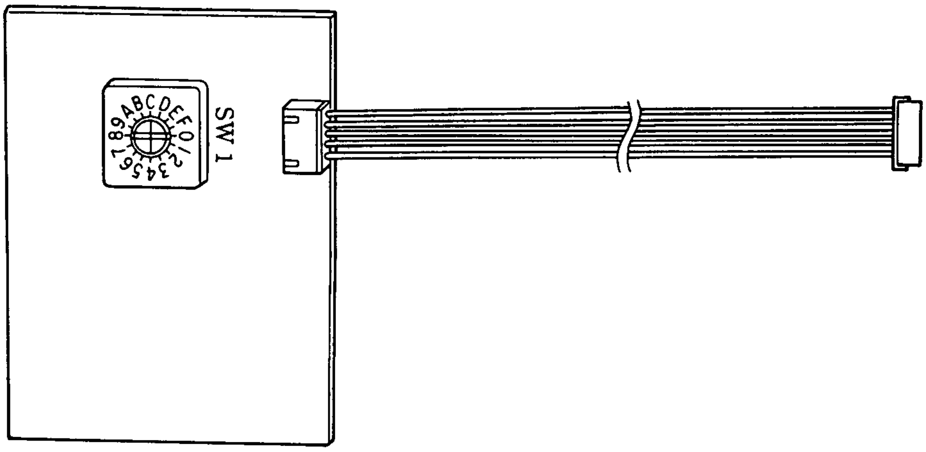


Fig8-4. Test mode set jig

TEST MODE table		Switch position of the test mode set jig.
DCBA	SELECT MODE	
0 0 0 0	Normal mode	0
0 0 0 1	Emergency off	1
0 0 1 0	TT TEST	2
0 0 1 1	Track shift	3
0 1 0 0	SW POSI L	4
0 1 0 1	SW POSI H	5
0 1 1 0	BATT DOWN PRE	6
0 1 1 1	BATT DOWN END	7
1 0 0 0	VIDEO DATA, MP, SP	8
1 0 0 1	VIDEO DATA, MP, LP	9
1 0 1 0	VIDEO DATA, ME, SP	A
1 0 1 1	VIDEO DATA, ME, LP	B

The test code is designated by four figures.

MSB LSB

“D”, TEST “C”, TEST “B”, TEST “A”

At short : 1, At open : 0

VIDEO DATA SELECT MODE is set at the TEST, “D” MAKE.

① Normal mode

Normal set condition

② Emergency off (Release of emergency stop)

③ TT TEST

MODE for extending the SIRCS code (For producing line)

④ Track shift

Run on the ATF track shift condition at the playback mode.

Timer microcomputer is in the clock adjustment mode.

⑤ SW POSI

Adjustment mode of switch position.

SWPOSI is stored in EEPROM as 16bit DATA. This data is adjusted dividing high 8bit and low 8bit. Use CH+/− KEY.

TEST MODE0101 : Varies at 16μsec per 1STEP.

TEST MODE0100 : Varies at 1μsec per 1STEP. When low 8 bit is incremented from FF. HEX, high 8 bit goes UP. And when it is decremented from 00.HEX, high 8 bit goes DOWN.

When the EEPROM has been replaced, it takes considerable time to adjust it. Therefore. the data must be preset before entering adjustment.

Preset function of the SW POSI is added. The preset function sets to high 8 bit to 07. HEX, when the DATA SCREEN KEY of SC part is pressed in the SW POSI adjustment mode. The low 8 bit is not varied.

<When the SV-66 Board IC206 is CXP80116-805Q>

If SW POSI adjustment has been done (for example, for mechanism deck replacement), IC206 should be replaced by CXP80116-821Q (8-752-818-67).

⑥ BATTTERY DOWN ADJUSTMENT

Adjusted with TEST MODE 0111. When this mode is set, the following display is shown on LCD.

$$\left.\begin{array}{ll} \text{PRE} & -1.76 \\ \text{DOWN} & -1.74 \end{array}\right\} \text{ex}$$

Supplying voltage for adjusting is performed with applying 5.50V+0.02V to the battery terminal in the TUNER REC SP MODE. When pressing the CH+ KEY on the KB-10P board, the color of display on the LCD turns to blue for few seconds from white, and then returns to white. The voltage of the battery PRE, DOWN is stored in EEPROM as the 8bit DATA by this operation.

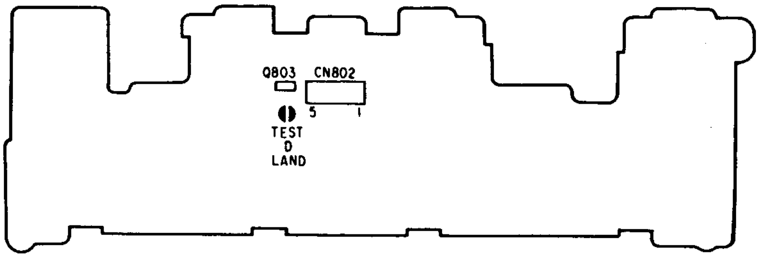
⑦ VIDEO DATA ADJUSTMENT MODE

Short the TEST D (Solder the split land at the lower part of the KB-10P board Q803)
The following display is shown on the LCD.

```
VIDEO DATA

CFL1   1    (RESET)
CFL2   1    (DISPLAY)
NCL1   1    (SLEEP)
NCL2   1    (NEXT)
NCLP1  1    (UP)
NCLP2  1    (CLOCK)
```

KB-10P BOARD (COMPONENT SIDE)



Six types of DATA are varied with the KEY on the SC part.

RESET → COUNTER RESET KEY
DISPLAY → DATA SCREEN KEY
SLEEP → SLEEP KEY
NEXT → NEXT KEY
UP → + KEY
CLOCK → CLOCK SET KEY

Pressing each KEY allows to rewrite DATA. ("0" is rewritten to "L", "1" is rewritten to "H".)
Four modes are adjusted by the types of TAPE (ME, MP) and TAPE SPEED (SP, LP).when the CH+KEY is pressed, the color of the display on the LCD turns to blue for few seconds from white and returns to white. The function to store the screen DATA in EEPROM is added by this operation. (See to the Table 8-2. for the data writing to EEPROM.)

Table 8-2. EE P ROM Write Data

TEST MODE						CFL1	CFL2	NCL1	NCL2	NCLP1	NCLP2
D	C	B	A	Switch position of the test mode set jig							
1	0	0	0	8	SP•MP	H	L	H	L	L	L
1	0	0	1	9	LP•MP	L	H	L	H	H	L
1	0	1	0	A	SP•ME	H	L	H	L	L	L
1	0	1	1	B	LP•ME	L	H	L	H	H	L

Note) When EEPROM is replaced, the following adjustment or write should be performed.

1. SW POSI adjustment
2. BATTERY DOWN adjustment
3. VIDEO DATA write
4. Channel preset

8-2. POWER SOURCE PART ADJUSTMENT

8-2-1. UNREG Power Source Voltage Check (SV-66 board)

Mode	Stop (POWER ON)
Measuring instrument	Digital voltmeter

BL UNREG check	
Measurement point	CN007 Pin ⑫
Specified value	5.9±0.2Vdc
DD UNREG check	
Meaurement point	CN007 Pin ⑪
Specified value	5.9±0.2Vdc
SS UNREG check	
Measurement point	CN007 Pin ⑥
Specified value	5.9±0.2Vdc
LD UNREG check	
Measurement point	CN007 Pin ③
Specified value	5.9±0.2Vdc
CAP UNREG check	
Measurement point	CN007 Pin ①
Specified value	5.9±0.2Vdc

[Checking method]

1) Check that the voltage of the stabilized power source is 6.0±0.1Vdc.
2) Each specified value should be satisfied.

8-2-2. Switch 5V Adjustment (SV-66 board)

Mode	Tuner receiver, record (SP mode)
Signal	Optional TV broadcast
Measurement point	CN009 Pin ⑭
Measuring instrument	Digital voltmeter
Adjustment element	RV401
Specified value	4.95±0.05Vdc

[Adjustment Method]

1) Adjust with RV401 to 4.95±0.05Vdc.

8-2-3. DD Converter Frequency Adjustment (SV-66 board)

Mode	Stop (POWER ON)
Measurement point	IC401 Pin ①
Measuring instrument	Frequency counter
Adjustment element	RV402
Specified value	479±5kHz

[Adjustment Method]

1) Adjust the oscillation frequency to 479±5Vdc with RV402.

8-2-4. −8V Adjustment (TU-126 board)

Mode	Stop (POWER ON)
Measurement point	CN001 Pin ㉒
Measuring instrument	Digital voltmeter
Adjustment element	RV501
Specified value	−8.0±0.1Vdc

[Adjustment Method]

1) Adjust with RV501 to −8.0±0.1Vdc.

8-2-5. LCD Power Source Voltage Check (RG-22 board)

Mode	Stop
Measuring instrument	Digital voltmeter
+13V check	
Measurement point	CN001 Pin ㉒
Specifed value	13.0±0.7Vdc
−20V check	
Measurement point	CN001 Pin ⑳
Specified value	−20.0±1.5Vdc

[Checking Method]

1) Each specified value should be satisfied.

8-2-6. CAM UNREG Check (CN-6P board)

Mode	Camera standby
Measurement point	CN601 Pin ①
Measuring instrument	Digital voltmeter
Specified value	5.75±0.10Vdc

[Connection]

1) Connect the CAMERA connector with the camera.
   If there is no camera, connect the resistance of 12Ω 5W between CN601 Pin ① and Pin ⑤.

[Checking Method]

1) Turn on the power, and input CAMERA with the INPUT SELECT button.
2) Check that the voltage of the stabilized power source is 6.0±0.1Vdc.
3) Check that the voltage of the CN601 Pin ① is 5.75±0.10Vdc.

8-3. SYSTEM CONTROL SYSTEM ADJUSTMENT

8-3-1. Clock Precision Adjustment (SV-66 board)

Mode	Stop (POWER ON)
Test mode *	0011 (Jig switch position 3)
Measurement point	CN003 Pin ㉔
Measuring instrument	Frequency counter
Adjustment element	CV101
Specified value	16384.0±0.2Hz

* Refer to 「8-1-7. Test mode」.

[Adjustment Method]

1) Set the test mode * 0011 (jig switch position 3).
2) Adjust with CV101 to 16384.0±0.2Hz.

8-3-2. Battery Down Adjustment

Refer to 「8-1-7. Test Mode ⑥ Battery Down Adjustment」.

8-4. SERVO SYSTEM ADJUSTMENT

8-4-1. CUE/REV Adjustment (SV-66 board)

Mode	CUE and REV
Signal	Alignment tape : for checking the SP mode operation (WR5-5CSP) : for checking the LP mode operation (WR5-4CL)
Measurement point	IC302 Pin ⑩ and Pin ⑪ and Q306 Ⓒ
Measuring instrument	Oscilloscope
Adjustment element	RV301
Specified value	WR5-5CSP at CUE/REV Q306 Ⓒ DC voltage level is "H" WR5-4CL at CUE/REV Q306 Ⓒ DC voltage level is "L"

[Adjustment Method]

1) Adjust the IC302 Pin ⑩ to 3.2±0.1Vdc with RV301.
2) Play back the WR5-5CSP and set the CUE and REV mode, check that the DC voltage level of Q306 Ⓒ is "H" (4Vdc or more). And play back the WR5-4CL and set the CUE and REV mode, check that the DC voltage level of Q306 Ⓒ is "L" (1Vdc or less).
3) When the item 2) is not satisfied, play back the WR5-5CSP and set the CUE and REV mode, measure the DC voltage of IC302 Pin ⑪. Set this value as V_{SP}. Play back the WR5-4CL and set the CUE and REV mode, measure the DC voltage of IC302 Pin ⑪. Set this value as V_{LP}.
   $$V=\frac{V_{SP}+V_{LP}}{2}$$
   Obtain the value of V, and adjust with RV301 so that the DC voltage of IC302 Pin ⑩ is the value of V.
4) Return to the item 2) and reconfirm.

8-4-2. Switching Position Adjustment (RP-105 board)

Mode	Playback
Test mode *	0101 (Jig switching position 5) and 0100 (Jig switching position 4)
Signal	Alignment tape : for tracking adjustment (WR5-1CP)
Measurement point	CH1 : CN503 Pin ④ (RF SW P) CH2 : CN503 Pin ③ (RF OUT)
Measuring instrument	Oscilloscope
Adjustment KEY	KB-10P board S802 (CH−) and S803 (CH+)
Specified value	t=0±10μsec

* Refer to 「8-1-7. Test mode」.

[Adjustment Method]

1) Set the test mode * 0101 (Jig switching position 5).
2) Press the DATA SCREEN button on the upper part of the LCD.
3) Press the S802(CH−) and S803(CH+) switches on the KB-10P board so that "t" is nearly 0. (rough adjustment)
4) Set the test mode * 0100 (Jig switching position 4).
5) Press S802(CH−) and S803 (CH+) switches on the KB-10 board so that t=0±10μsec. (fine adjustment)
6) Disconnect the test mode jig.

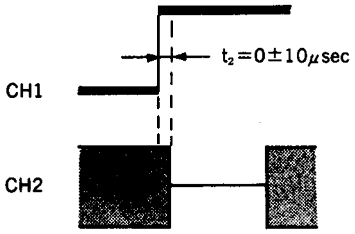


Fig. 8-6.

8-5. VIDEO SYSTEM ADJUSTMENT

Adjust the video system in the following procedures in principle. The color bar signal supplied from the pattern generator is used as the video input signal for the video system adjustment of the recording mode. Check that the synchronous signal and the color burst signal are satisfied with the specified value designated to the adjusting setup as shown in the figure 8-2.

[Adjustment Procedures]

1) Playback frequency characteristic adjustment
2) fsc check
3) SYNC AGC adjustment
4) IR adjustment
5) Y/C separation adjustment
6) Emphasis Y level adjustment
7) De-emphasis Y level adjustment
8) Playback Y level adjustment
9) Playback V level adjustment
10) Y FM carrier adjustment
11) Y FM deviation adjustment
12) Recording Y level adjustment
13) Chroma emphasis adjustment
14) Recording chroma level adjustment

8-5-1. Playback Frequency Characteristic Adjustment (RP-105 board)

Mode	Playback
Signal	Alignment tape : for frequency characteristic adjustment(WR5-6C)
Measurement point	CH1 : CN503 Pin ④(RF SWP) CH2 : CN503 Pin ③(PB RF)
Measuring instrument	Oscilloscope
Adjustment element	PB1-CH : RV501 PB2-CH : RV502
Specified value	3.5MHz level : 5.5MHz level=4 : 3

[Adjustment Method]

1) Adjust with each RV so that the PB1-CH, PB2-CH and PB RF OUT satisfy the specified value.

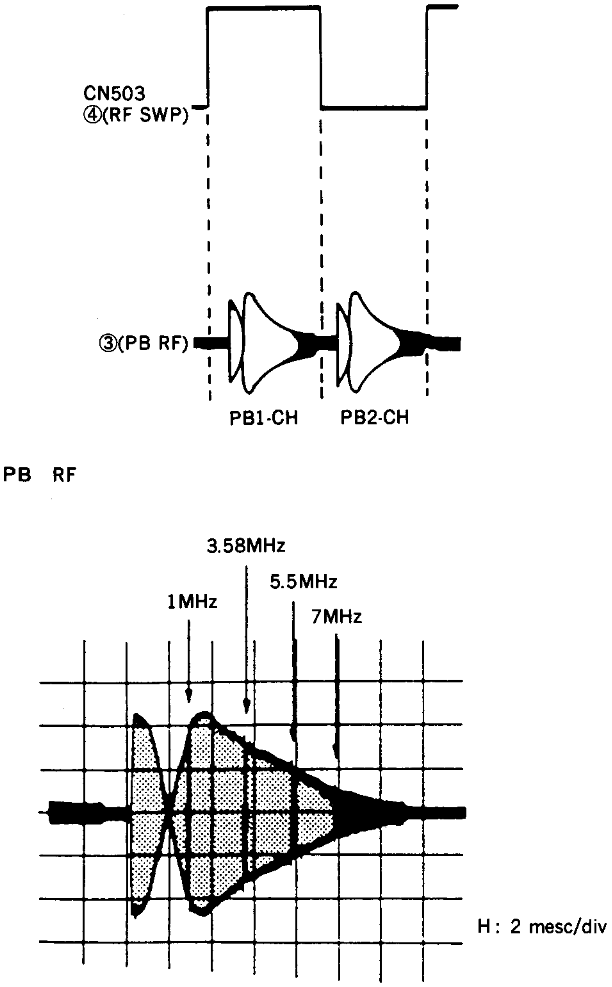


Fig. 8-7

8-5-2. fsc Check (SV-66 board)

Mode	Playback
Signal	Alignment tape : for operation check(WR5-5CSP) Color bar part
Measurement point	IC701 Pin ⑫
Measuring instrument	Oscilloscope Frequency counter
Specified value	Oscillation frequency : 4433619±150Hz Output level : 400±50mVp-p

[Checking Method]

1) Check that the oscillation frequency of the IC701 Pin ⑫ is 4433619±150Hz and the output level is 400±50mVp-p.

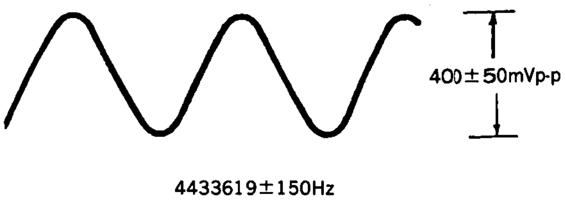


Fig.8-8.

8-5-3. SYNC AGC Adjustment (SV-66 board)

Mode	Recording
Signal	Color bar
Measurement point	IC601 Pin ㉜
Measuring instrument	Oscilloscope
Adjustment element	RV771
Specified value	0.50±0.02Vp-p

[Adjustment Method]

1) Adjust with RV771 to 0.50±0.02Vp-p.

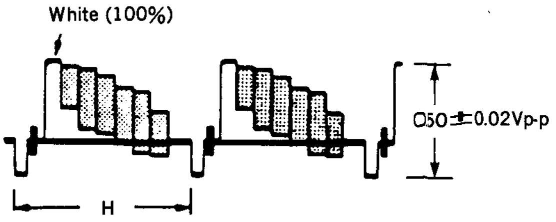


Fig. 8-9.

8-5-4. IR Adjustment (SV-66 board)

Mode	Recording
Signal	Color bar
Measurement point	IC601 Pin ⑦
Measuring instrument	Oscilloscope
Adjustment element	RV601
Specified value	Minimize the red remaining chroma element (60mVp-p or less)

[Preparation]

1) Short with the jumper wire between the Pin ⑭ and Pin (51) of IC601.

[Adjustment Method]

1) Minimize the red remaining chroma element with RV601. (60mVp-p)
2) After the adjustment, disconnect the jumper wire.

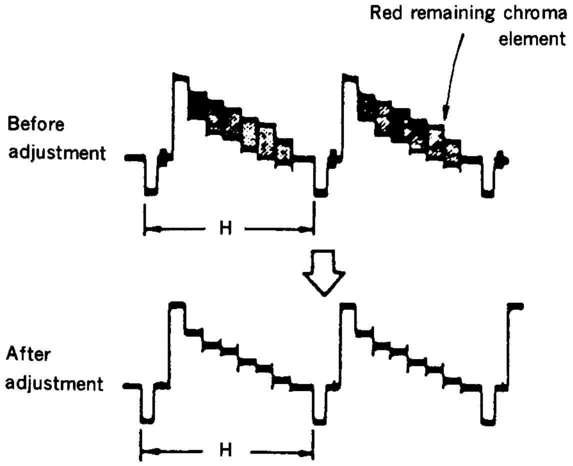

Red remaining chroma element
Before adjustment
H
After adjustment
H

Fig.8-10.

8-5-5. Y/C Separation Adjustment (SV-66 board)

Mode	Recording
Signal	Color bar
Measurement point	IC601 Pin ⑪
Measuring instrument	Oscilloscope
Adjustment element	RV602, RV651 (alternate adjustment)
Specified value	Minimize the red remaining chroma element (30mVp-p or less)

[Adjustment Method]

1) Adjust RV602 and RV651 alternately, and minimize the red remaining chroma element.

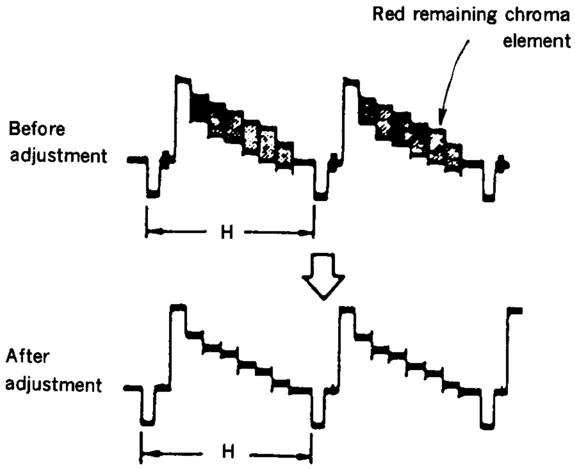

Red remaining chroma element
Before adjustment
H
After adjustment
H

Fig.8-11.

8-5-6. Emphasis Y Level Adjustment (SV-66 board)

Mode	Recording
Signal	Color bar
Measurement point	IC601 Pin ③
Measuring instruement	Oscilloscope
Adjustment element	RV652
Specified value	0.50±0.02Vp-p

[Adjustment Method]

1) Adjust with RV652 to 0.50±0.02Vp-p.

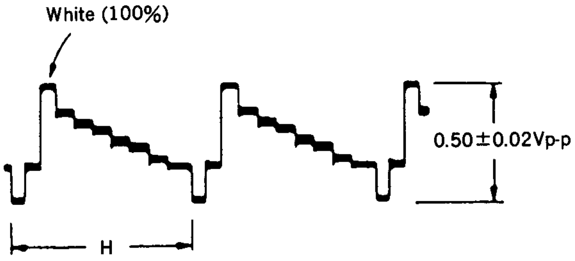


Fig.8-12.

8-5-7. De-emphasis Y Level Adjustment (SV-66 board)

Mode	Playback
Signal	Alignment tape: for operation check (WR5-5CSP)
Measurement point	IC601 Pin ㉑
Measuring instrument	Oscilloscope
Adjustment element	RV605
Specified value	0.50±0.02Vp-p

[Adjustment Method]

1) Adjust with RV605 to 0.50±0.02Vp-p.

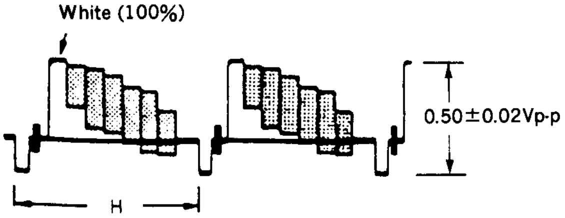


Fig.8-13.

8-5-8. Playback Y Level Adjustment (SV-66 board)

Mode	Playback
Signal	Alignment tape: for operation check (WR5-5CSP) color bar part
Measurement point	IC601 Pin ③
Measuring instrument	Oscilloscope
Adjustment element	RV653
Specified value	0.50±0.02Vp-p

[Adjustment Method]

1) Adjust with RV653 to 0.50±0.02Vp-p.

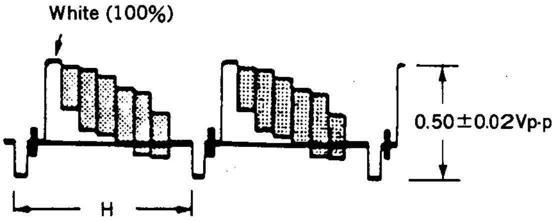


Fig.8-14.

8-5-9. Playback V Level Adjustment (SV-66 board)

Mode	Playback
Signal	Alignment tape: for operation check (WR5-5CSP) color bar part
Measurement point	IC601 Pin ③
Measuring instrument	Oscilloscope
Adjustment element	RV772
Specified value	1.00±0.05Vp-p

[Adjustment Method]

1) Adjust with RV772 to 1.00±0.05Vp-p.

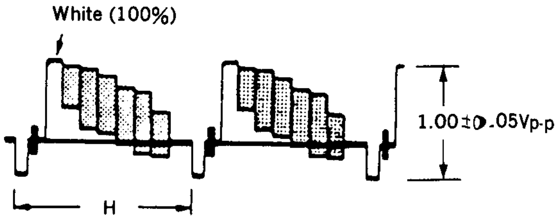


Fig.8-15.

8-5-10. Y FM Carrier Adjustment (SV-66 board)

Mode	Recording
Signal	No signal
Measurement point	CN801 Pin ⑩
Measuring instrument	Frequency counter
Adjustment element	RV603
Specified value	4.37±0.02MHz

[Adjustment Method]

1) Adjust with RV603 to 4.37±0.02MHz.
2) After the adjustment, be sure to perform 「Y FM deviation adjustment」.

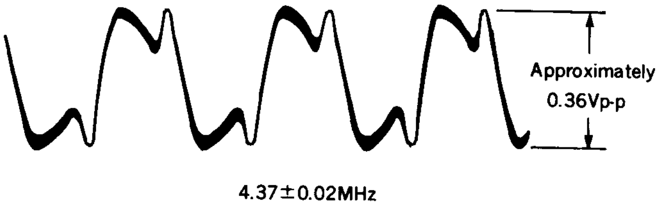


Fig.8-16.

8-5-11. Y FM Deviation Adjustment (SV-66 board)

Mode	Recording and playback
Signal	Color bar
Measurement point	VIDEO input-output terminal (75Ω terminal)
Measuring instrument	Oscilloscope
Adjustment element	RV604
Specified value	Playback level is 1.00±0.05Vp-p

Note) 「De-emphasis Y level adjustment」, 「Playback Y level adjustment」 and 「Y FM carrier adjustment」 should be completed.

[Adjustment Method]

1) Record the color bar signal.
2) Play back the recorded signal.
3) Check the playback output.
   Specified value: 1.00±0.05Vp-p
4) When the specified value is not satisfied, rotate RV604 as shown in the following table and return to the item 1), and then perform the reconfirmation.

	Rotating direction of RV604
Over the specified value	Clockwise (↻)
Under the specified value	Counterclockwise (↺)

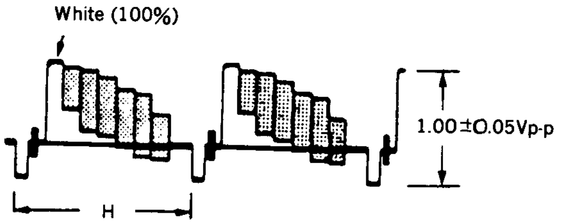


Fig.8-17

8-5-12. Recording Y Level Adjustment (SV-66 board)

Mode	Recording
Signal	No signal
Measurement point	CN801 Pin ⑩
Measuring instrument	Oscilloscope (20MHz band limit ON)
Adjustment element	RV802
Specified value	360±5mV

[Adjustment Method]

1) Adjust with RV802 to 360±5mV.

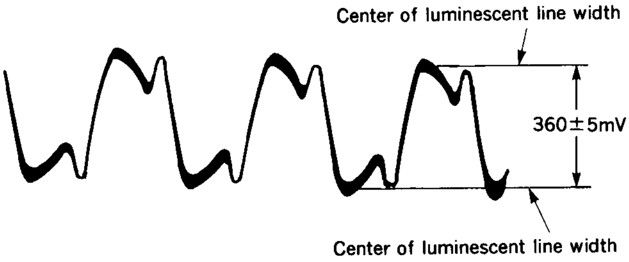

Center of luminescent line width
360±5mV
Center of luminescent line width

Fig.8-18.

8-5-13. Chroma Emphasis Adjustment (SV-66 board)

Mode	Recording
Signal	Color bar
Measurement point	IC701 Pin ㉔
Measuring instrument	Oscilloscope
Adjustment element	FL702
Specified value	Minimize the red level

[Preparation]

1) Connect the resistance of 3.3kΩ between the IC701 Pin ㉔ and GND.

[Adjustment Method]

1) Minimize the red level with FL702.
2) After the adjustment, disconnect the resistance connected in the preparation.

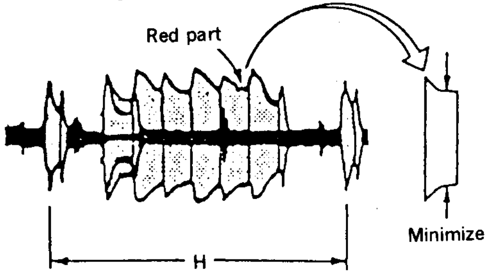

Red part
Minimize
H

Fig.8-19.

8-5-14. Recording Chroma Level Adjustment (SV-66 board)

Mode	Recording
Signal	Color bar
Measurement point	CN801 Pin ⑪
Measuring instrument	Oscilloscope
Adjustment element	RV701
Specified value	Red level : 160±10mVp-p

[Adjustment Method]

1) Adjust the red level to 160±10mVp-p with RV701.

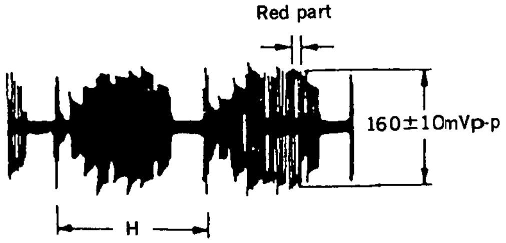

Red part
160±10mVp-p
H

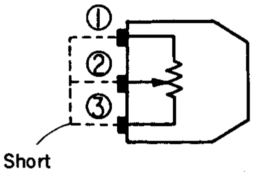
Fig.8-20.

8-6. LCD SYSTEM ADJUSTMENT

Caution: If you touch the back light holder, you may receive an electric shock. Be careful to perform the adjustment.

[Preparation]

1) The adjustment except for 「white balance adjustment」 and 「V COM DC adjustment」, the back light unit is not required. Remove it and perform the adjustment.
2) Set the VR as follows if there is no special direction.
   - BRIGHT (RV004)
     ·········Set the mechanical center position and short among pin ①,② and ③.



   - COLOR (RV001)
     ·········The position where the voltage of IC002 (57) of the RG-22 board is 1.5±0.1Vdc.

[Video input signal for adjustment]

Input the color bar signal, which the chroma signal and the burst signal are turned off, to the video input terminal as a video input signal for adjustment. Check with the CN001 pin ㉔ of the RG-22 board.

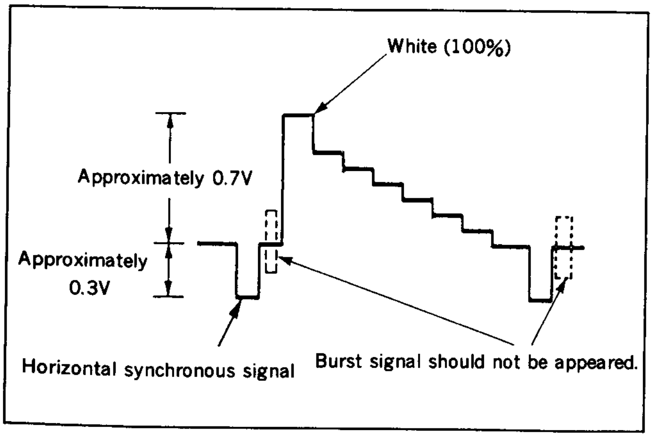

White (100%)
Approximately 0.7V
Approximately 0.3V
Horizontal synchronous signal
Burst signal should not be appeared.

Fig.8-21. Color bar signal which the chroma signal and the burst signal are turned off

8-6-1. Contrast Adjustment (RG-22 board)

Mode	POWER ON
Signal	Color bar which the chroma signal and the burst signal are turned off.
Measurement point	CN002 Pin ⑨
Measuring instrument	Oscilloscope
Adjustment element	RV006
Specified value	3.0±0.1V

[Adjustment Method]

1) Adjust with RV006 so that the voltage between white (100%) and the pedestal is 3.0±0.1V.

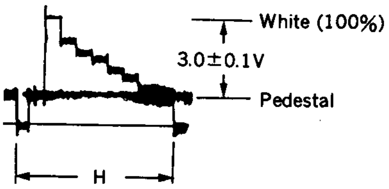

White (100%)
3.0±0.1V
Pedestal
H

Fig.8-22.

8-6-2. R Gain Adjustment (RG-22 board)

Mode	POWER ON
Signal	Color bar which the chroma signal and the burst signal are turned off
Measurement point	CN002 Pin ⑩
Measuring instrument	Oscilloscope
Adjustment element	RV005
Specified value	3.0±0.1V

[Adjustment Method]

1) Adjust with RV005 so that the voltage between white (100%) and the pedestal is 3.0±0.1V.

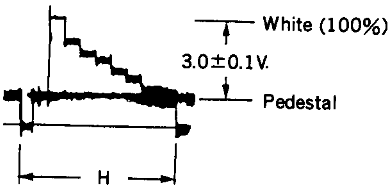

White (100%)
3.0±0.1V.
Pedestal
H

Fig. 8-23.

8-6-3. B Gain Adjustment (RG-22 board)

Mode	POWER ON
Signal	Color bar which the chroma signal and the burst signal are tured off
Measurement point	CN002 Pin ⑪
Measuring instrument	Oscilloscope
Adjustment element	RV003
Specified value	2.6±0.1V

[Adjustment Method]

1) Adjust with RV003 so that the voltage between white (100%) and the pedestal is 2.6±0.1V.

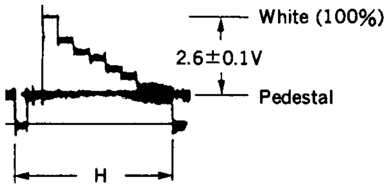


Fig. 8-24.

8-6-4. Sub Bright Adjustment (RG-22 board)

Mode	POWER ON
Signal	Color bar which the chroma signal and the burst signal are turned off
Measurement point	CN002 Pin ⑨, Pin ⑩ and Pin⑪ (G) (R) (B)
Measuring instrument	Oscilloscope (DC range)
Adjustment element	RV010, RV007 and RV008
Specified value	−3.4±0.1V

[Connection]

1) Install the LCD unit and perform the adjustment.

[Adjustment Method]

1) Adjust with RV009 so that the DC level of the pedestal part of the positive polarity G signal is −3.4±0.1Vdc.
2) Adjust with RV007 so that the DC level of the pedestal part of the positive polarity R signal is −3.4±0.1Vdc.
3) Adjust with RV008 so that the DC level of the pedestal part of the positive polarity B signal is −3.4±0.1Vdc.

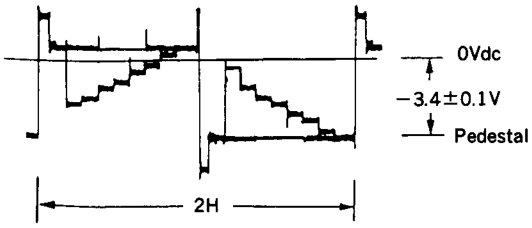


Fig.8-25.

8-6-5. fsc Adjustment (RG-22 board)

Mode	POWER ON
Signal	Video signal which the chroma signal, the burst signal and the Y signal are turned off.(Video signal with only synchronous signal)
Measurement point	IC002 Pin ④
Measuring instrument	Frequency counter
Adjustment element	CV002
Specified value	4433619±300Hz

Note: Connect the frequency counter through the buffer amplifier (oscilloscope, etc) with high impedance (1MΩ or more) and low capacity.

[Adjustment Method]

1) Adjust with CV002 so that the fsc frequency is 4433619± 300Hz.

8-6-6. White Balance Adjustment (RG-22 board)

Mode	POWER ON
Signal	Color bar which the chroma signal and the burst signal are turned off.
Measurement point	Check on the LCD screen
Measuring instrument	
Adjustment element	RV003 (B gain) RV005 (R gain)
Specified value	Screen should not be colored.

[Connection]

1) Perform the adjustment connecting the LCD unit and the back light.

[Adjustment Method]

1) Check that the LCD screen is not colored. If the screen is colored, adjust with RV003 (B gain) and RV005 (R gain).

8-6-7. V COM DC Adjustment (RG-22 board)

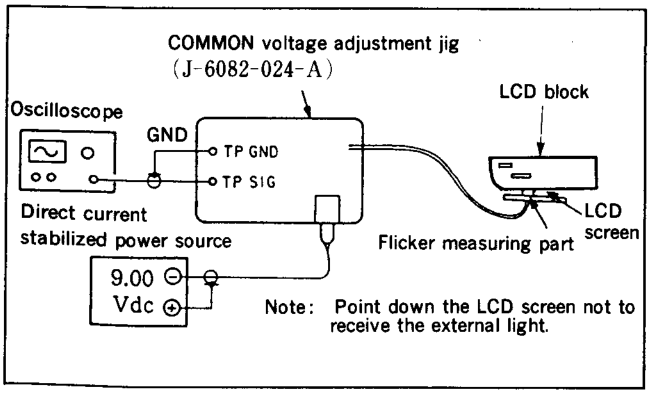
Mode	POWER ON
Signal	Color bar which the chroma signal and the burst signal are turned off
Measurement point	LCD screen
Measuring instrument	Oscilloscope
Adjustment element	V COM DC VR on the LCD unit
Specified value	The amplitude of the flicker waveform is the minimum.

Note: Perform the 「V COM DC adjustment」 with assembling the LCD block.
Take care that the external light should not enter into the light receiving part of the COMMON voltage adjustment jig.

[Adjustment Method]

1) Expose the light receiving part of the COMMON voltage adjustment jig to the LCD screen. (Point down the LCD screen not to receive the external light.)
2) Connect the oscilloscope with the COMMON voltage adjustment jig.
3) Turn V COM DC VR and check that the flicker waveform as shown in the fig.8-26 is output.
(When the flicker waveform is not output, check the exposing method of the light receiving part and the external light condition, and check with turning the BRIGHT control.)
4) Minimize the flicker waveform amplitude with V COM DC VR.

Note: Turn V COM DC VR slowly because it takes long time to respond to LCD.
The minimum point of the flicker waveform amplitude is nearly coincided with the maximum point of the contrast.


COMMON voltage adjustment jig
(J-6082-024-A)
LCD block
Oscilloscope
GND
TP GND
TP SIG
Direct current
stabilized power source
9.00
Vdc
Flicker measuring part
LCD
screen

Note: Point down the LCD screen not to receive the external light.

Fig.8-26

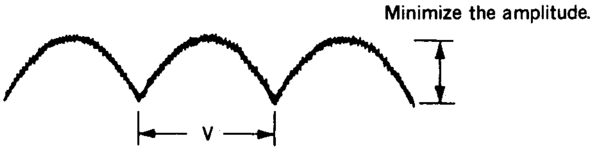

Minimize the amplitude.
V

Fig.8-27.

8-6-8. Character Position Adjustment (RG-22 board)

Mode	POWER ON
Signal	Color bar
Measurement point	LCD screen
Measuring instrument	
Adjustment element	CV801
Specified value	Fig.8-28.

[Adjustment Method]

1) Press the CLOCK SET button of the LCD block and check that black frame and "0 : 00" display on the LCD screen.
2) Make black frame on the right end of the LCD screen with CV801 and adjust so that it dissapears.
3) Press twice the NEXT button of the LCD block and turn off the black frame on the LCD screen. (It takes approximately five seconds to turn off the frame.)

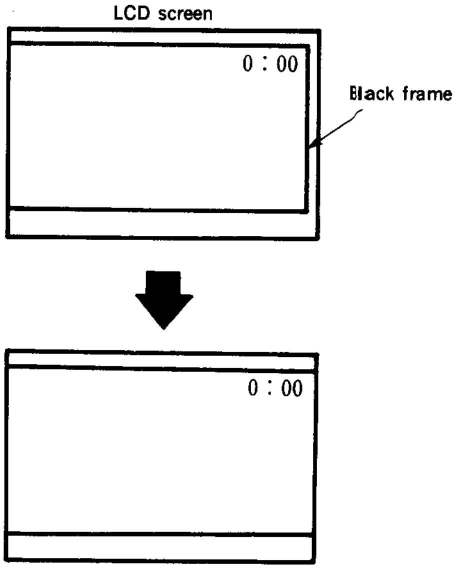

LCD screen
0 : 00
Black frame
0 : 00

Fig.8-28.

8-7. TUNER SYSTEM ADJUSTMENT

8-7-1. RF AGC Adjustment (TU-126 board)

Mode	E-E
Signal	Broadcast TV signal
Adjustment element	RV101

[Adjustment Method]

1) Connect the monitor TV.
2) Adjust the monitor TV to the most proper contrast and receive the broadcast TV signal.
3) Turn RV101 to show the snow noise.
4) Turn RV101 in the reverse direction, and set to the point that the snow noise disappears.
5) Receive each channel and check that there is no beat by the cross modulation, picture distortion and snow noise.

8-8. AUDIO SYSTEM ADJUSTMENT

- Adjust using the color bar signal as the video signal input.

[Connection of the measuring instruments for audio]

Connect the audio system measuring instruements as shown in the following figure as well as the video system measuring instruments. Set the power switch to the ⌈VTR⌋ side if there is no special direction.

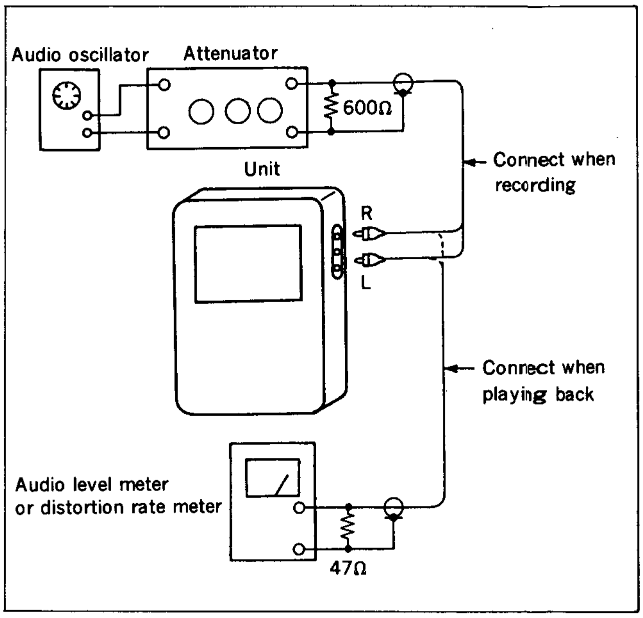


Fig.8-29.

[VIDEO/AUDIO terminal of the unit]

The VIDEO and AUDIO (L/R) terminal has a function both input and output. The operation as the input terminal or as the output terminal is automatically selected according to the operation mode of the unit.
When connecting with other instruements, perform according to input-ouput of the terminal.

Operation mode of the unit and the input-output automatic selection of the terminal

Input mode selected with the INPUT SELECT button	The case that the unit is stopped or the recording mode is set	The case that the unit is set to the playback mode
TUNER (Television screen)	Output	Output
LINE*	Input	Output
CAMERA	Output	Output

*When the LINE is selected with the INPUT SELECT button, the display of INPUT and OUTPUT is shown.

[Setting of the switches]

Set the following mode if there is no special direction.

- SP/LP button ……………………………………SP
- INPUT SELECT button ……………………………LINE
- AUTO STEREO switch ……………………………ON
- LINE AUDIO button…………………………………ST
- AUDIO MONITOR button……………(S) and MAIN

[Notes]

- When the sound signal is input, input the same signal to both L and R channel if there is no special direction.
- Be sure to insert a plug (shorting plug or dummy plug) to the AUDIO R input-output terminal if there is no special direction. When a plug is not inserted, the monaural mode is set and the proper adjustment is not performed.
  (Monaural mode)
  At recording………………REC AFM RF 1.7MHz carrier is not ouput.
  At playing back …………L+R signal is output from the AUDIO L input-output terminal.

[Adjustment Procedures]

1.5MHz carrier frequency adjustment
1.7MHz carrier frequency adjustment
E-E output level check
1.5MHz carrier level check
1.7MHz carrier level adjustment
1.5MHz deviation adjustment
1.7MHz deviation adjustment note)
Recording matrix L+R adjustment
Recording matrix L−R adjustment
Bilingual mode adjustment
Playback bilingual mode detect adjustment note)
Playback matrix adjustment
Total level characteristic separation check
Total distortion rate check

Note) The adjustment method of the 1.7 MHz deviation adjustment and Playback bilingual mode detect adjustment are shown later.

8-8-1. 1.5MHz Carrier Frequency Adjustment (AU-98 board)

Mode	Recording
Signal	No signal
Mesurement point	IC101 Pin ⑬
Meauring instrument	Frequency counter
Adjustment element	RV102
Specified value	1.50±0.02MHz

Note : Use the 10 : 1 probe for connecting the frequency counter.

[Connection]

1) Short with the jumper wire between IC113 pin ㉕ (PLL PB) and CN101 Pin ① (SW 5V).

[Adjustment Method]

1) Adjust with RV102 to 1.50±0.02MHz.
2) Keep the jumper wire for connecting and perform the 1.7MHz carrier frequency adjustment.

8-8-2. 1.7MHz Carrier Frequency Adjustment (AU-98 board)

Mode	Recording
Signal	No signal
Mesurement point	IC201 Pin ⑬
Meauring instrument	Frequency counter
Adjustment element	RV202
Specified value	1.70±0.01MHz

Note : Use the 10 : 1 probe for connecting the frequency counter.

[Connection]

1) Short with the jumper wire between IC113 pin ㉕ (PLL PB) and CN101 Pin ① (SW 5V).

[Adjustment Method]

1) Adjust with RV202 to 1.70±0.01MHz.
2) After the adjustment, disconnect the jumper wire.

8-8-3. E-E Output Level Check

Mode	Camera recording
Signal	CN-6P board J601 Pin ⑤ [Pin ⑨] 400Hz, −15dBs
Measurement point	AUDIO L [R] Input-output terminal
Measuring instrument	Audio level meter
Specified value	−7.5±2dBs

[Checking Method]

1) Check that the 400Hz signal is −7.5±2dBs.

8-8-4. 1.5MHz Carrier Level Check (AU-98 board)

Mode	Recording
Signal	No signal (Both L and R 600Ωterminal)
Measurement point	CN102 Pin ③
Measuring instrument	Oscilloscope
Specified value	128±10mVp-p

[Preparation]

1) Terminate both L and R AUDIO terminals at 600Ω. The pin plug should not be inserted to the R terminal. (For setting to the monaural mode)

[Checking Method]

1) Check that the 1.5MHz REC AFM RF signal level is 128±10mVp-p. (Read the center level of the luminescent width.)

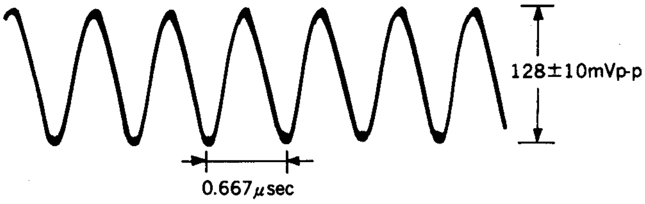


Fig.8-30.

8-8-5. 1.7MHz Carrier Level Adjustment (AU-98 board)

Mode	Recording
Signal	No signal (Both L and R 600Ωterminal)
Measurement point	CN102 Pin ③
Measuring instruement	Oscilloscope
Adjustment element	RV203
Specified value	(1.5MHz carrier level)−(1.7MHz carrier level)=27±10mV

[Preparation]

1) Terminate both L and R AUDIO terminals at 600Ω. Check that the dummy plug is inserted to the R terminal. (For setting the stereo mode)

[Adjustment Method]

1) Connect the capacitor of 0.01μF between IC201 pin ⑭ and GND.
2) Measure the 1.5MHz carrier level by the oscilloscope and write it down.
3) Disconnect the capacitor connected in the procedure 1).
4) Connect the capacitor of 0.01μF between IC101 Pin ⑭ and GND.
5) Measure the 1.7MHz carrier level by the oscilloscope and adjust with RV203 to (1.5MHz carrier level)−(1.7MHz carrier level)=27±10mV.
6) Disconnect the capacitor connected in the procedure 4).

8-8-6. 1.5MHz Deviation Adjustment (AU-98 board)

Mode	Playback
Signal	Alignment tape: for operation check (WR5-4CSP)
Measurement point	CN101 Pin ⑤
Measuring instruement	Oscilloscope
Adjustment element	RV101
Specified value	925±21mVp-p (−7.5±0.2dBs)

[Adjustment Method]

1) Adjust with RV101 so that the 400Hz signal level is 925±21mVp-p.

8-8-7. Recording Matrix L+R Adjustment (AU-98 board)

Mode	Recording
Signal	1. 400Hz, −7.5dBs AUDIO L input-output terminal Input 2. 400Hz, −7.5dBs AUDIO R input-output terminal Input
Measurement point	IC104 Pin ①
Measuring instruement	Oscilloscope
Adjusment element	RV401
Specified value	The level difference at the L terminal input and the R terminal input is 0±5mVp-p.

Note: Measure the signal level after passing one minute or more from the signal input.

[Adjustment Method]

1) Input 400Hz and −7.5dBs signal to the AUDIO L input-output terminal. (Insert the shorting plug to the R terminal.)
2) Read the signal level of IC104 Pin ① and write it down.
3) Input 400Hz and −7.5dBs signal to the AUDIO R input-output terminal.
(Insert the shorting plug to the L terminal.)
4) Adjust with RV401 so that the signal level of IC104 Pin ① is ±5mVp-p measured in the procedure 2).

8-8-8. Recording Matrix L−R Adjustment (AU-98 board)

Mode	Recording
Signal	400Hz, −7.5dBs Input to the both L and R terinal of AUDIO input- output terminal.
Measurement point	IC106 Pin ①
Measuring instrument	Oscilloscope
Adjustment element	RV402
Specified value	0±10mVp-p

Note: Use the 1 : 1 probe.

[Adjustment Method]

1) Adjust with RV402 so that the signal level of IC106 Pin ① is 0±10mVp-p.

8-8-9. Bilingual Mode Adjustment (AU-98 board)

Mode	Recording
Signal	No signal (Both L and R 600Ω terminal)
Measurement point	CN102 Pin ③
Measuring instrument	Oscilloscope
Adjustment element	RV103
Specified value	A : B=100:250^{+30}_{-25}

[Preparation]

1) Terminate both L and R AUDIO terminals at 600Ω, Check that the dummy plug is inserted to the R terminal. (For setting the stereo mode.)

[Adjustment Method]

1) Adjust with RV103 to A : B=100 : 250^{+30}_{-25}.

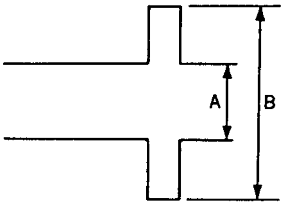


Fig.8-31.

8-8-10. Playback Matrix Adjustment (AU-98 board)

Mode	Playback
Signal	Alignment tape: for AFM stereo operation check (WR5-9CS)
Measurement point	CN101 Pin ⑤ and Pin ⑦
Measuring instruement	Oscilloscope
Adjustment element	RV204
Specified value	The distortion of the 400Hz output waveform of CN101 pin ⑤ and the 1kHz output waveform of pin ⑦ is the minimum.

[Adjustment Method]

1) Adjust with RV204 so that the distortion of the 400Hz output waveform of CN101 pin ⑤ and the 1kHz output waveform of pin ⑦ is the minimum.

8-8-11. Total Level Characteristic Separation Check

Mode	Self playback
Signal	400Hz, −7.5dBs: AUDIO L [R] input-output terminal No signal (Insert a shorting plug.): AUDIO R [L] input-output terminal
Measurement point	AUDIO L [R] input-output terminal
Measuring instrument	Audio level meter
Specified value	Signal level: −7.5±2dBs Cross talk level: −25.0dBs or less

Note : Be sure to insert the dummy plug to the R terminal when measuring the L side playback output level.

[Checking Method]

1) Record the signal.
2) Connect the audio level meter to the AUDIO L [R] input-output terminal.
3) Play back the recorded part and check that the L [R] output signal level is −7.5±2dBs.
4) Check that the R [L] output cross talk level is −25.0dBs or less.

8-8-12. Total Distortion Rate Check

Mode	Self playback
Signal	400Hz, −7.5dBs Input both L and R AUDIO input-output terminals
Measurement point	AUDIO L [R] input-output terminal
Measuring instrument	Distortion Rate Meter
Specified value	1.2% or less

Note : Be sure to insert the dummy plug to the R terminal when measuring the L side playback distortion rate.

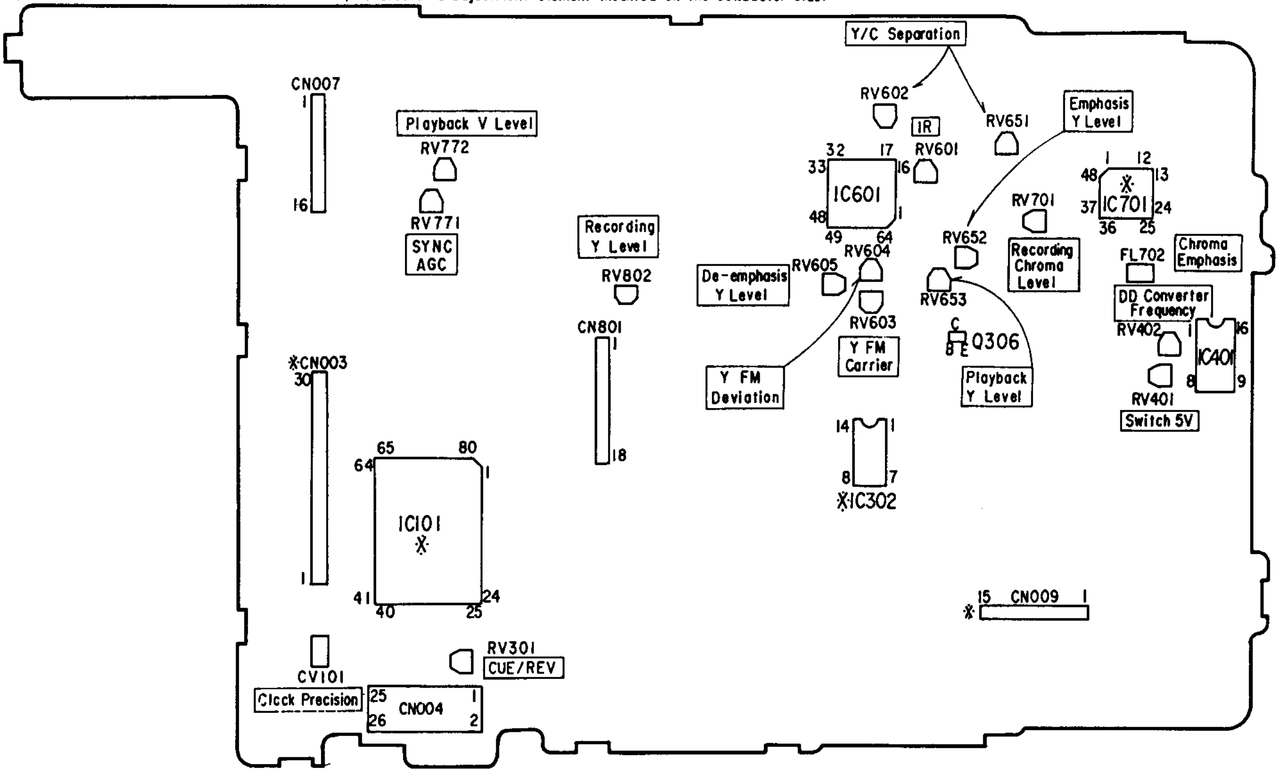
[Checking Method]

1) Record the signal.
2) Connect the distrotion rate meter to the AUDIO L [R] input-output terminal.
3) Play back the recorded part and check that the distortsion rate of the L [R] output is 1.2% or less.

8-9. ADJUSTING PARTS LOCATION DIAGRAM

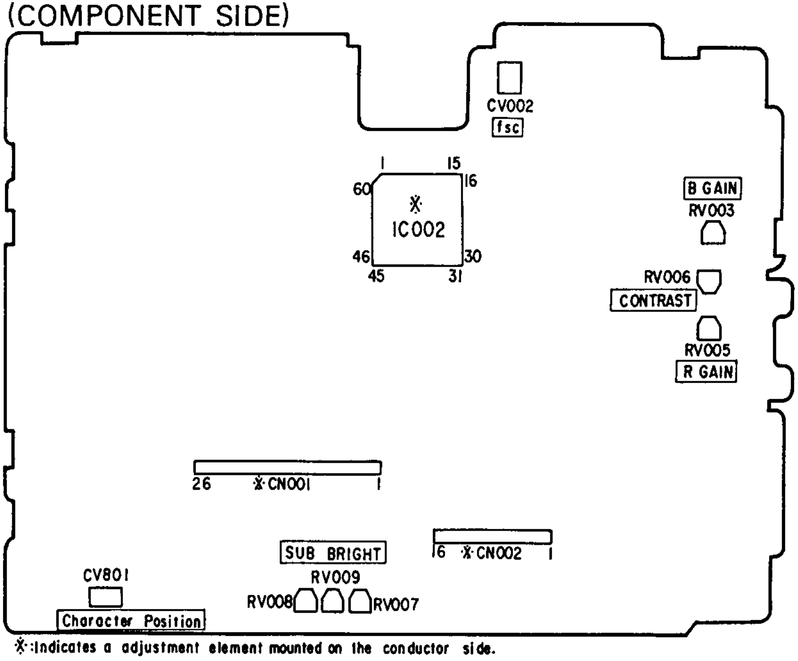
SV-66 BOARD (COMPONENT SIDE)

※: Indicates a adjustment element mounted on the conductor side.



Y/C Separation
RV602
RV651
IR
Emphasis Y Level
CN007
Playback V Level
RV772
RV601
IC601
32
17
33
16
48
1
49
64
IC701
1
12
48
13
37
24
36
25
RV701
RV771
SYNC AGC
Recording Y Level
RV802
De-emphasis Y Level
RV605
RV604
RV603
RV652
RV653
Recording Chroma Level
FL702
Chroma Emphasis
DD Converter Frequency
RV402
IC401
16
8
9
RV401
Switch 5V
CN801
1
18
※CN003
30
1
Y FM Deviation
Y FM Carrier
Q306
C
B E
Playback Y Level
14
1
8
7
※IC302
IC101
※
65
80
64
1
41
24
40
25
CN009
15
1
※
CV101
Clock Precision
RV301
CUE/REV
CN004
25
1
26
2
16

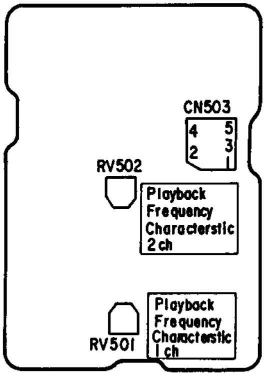
RG-22 BOARD (COMPONENT SIDE)



CV002
fsc
IC002
※
1
15
60
16
46
30
45
31
B GAIN
RV003
RV006
CONTRAST
RV005
R GAIN
26
※CN001
1
6
※CN002
1
SUB BRIGHT
RV009
CV801
RV008
RV007
Character Position

※: Indicates a adjustment element mounted on the conductor side.

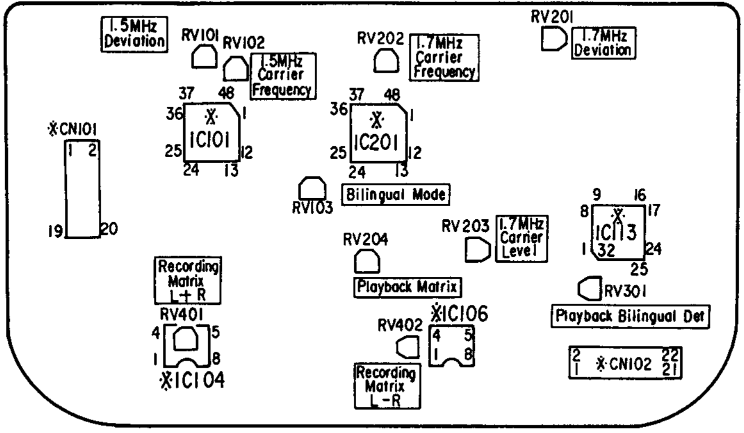
RP-105 BOARD (COMPONENT SIDE)



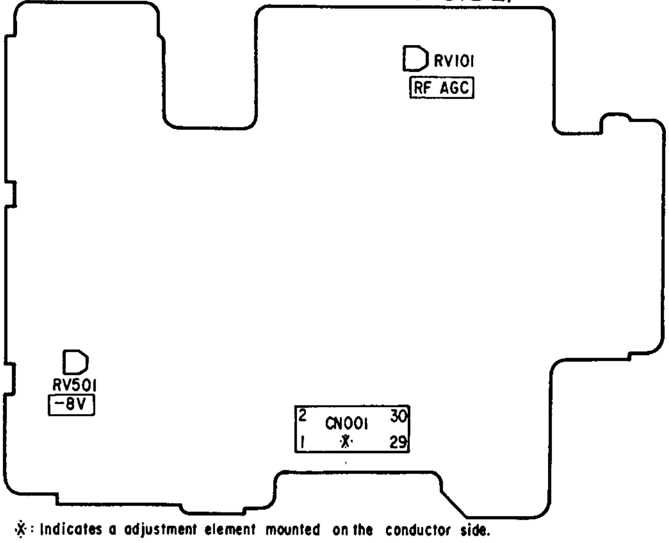
CN503
4
5
2
3
1
RV502
Playback Frequency Characterstic 2ch
RV501
Playback Frequency Characterstic 1ch

AU-98 BOARD (COMPONENT SIDE)

※: Indicates a adjustment element mounted the conductor side.

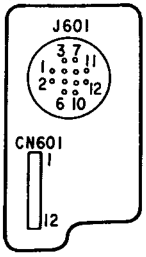

1.5MHz Deviation
RV101
RV102
1.5MHz Carrier Frequency
RV202
1.7MHz Carrier Frequency
RV201
1.7MHz Deviation
※CN101
1 2
19 20
37 48
36 1
※
IC101
25 12
24 13
37 48
36 1
※
IC201
25 12
24 13
RV103
Bilingual Mode
9 16
8 17
※
IC113
1 32 24
25
RV203
1.7MHz Carrier Level
RV204
Playback Matrix
RV301
Playback Bilingual Det
Recording Matrix L+R
RV401
4 5
1 8
※IC104
RV402
※IC106
4 5
1 8
Recording Matrix L-R
2 ※CN102 22
1 21

TU-126 BOARD(COMPONENT SIDE)


RV101
RF AGC
RV501
-8V
2 CN001 30
1 ※ 29

※: Indicates a adjustment element mounted on the conductor side.

CN-6P BOARD (COMPONENT SIDE)

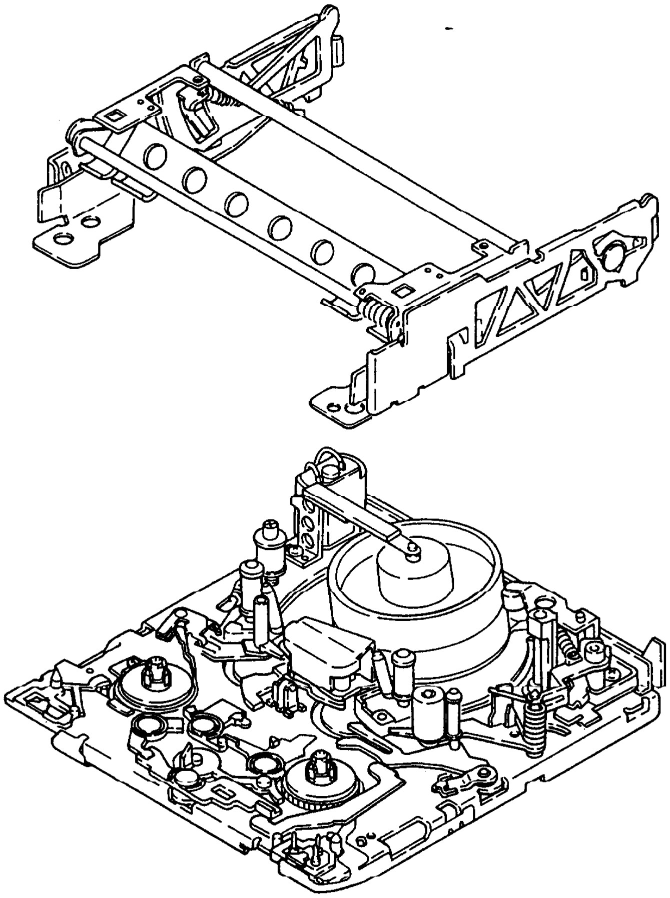

J601
3 7
1 11
2 12
6 10
CN601
1
12

mm Video MECHANICAL ADJUSTMENT MANUAL III

U MECHANISM

Video 8

Please use in conjunction with the SERVICE MANUAL.



8 MECHANISM DECK

SONY®

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1. PREPARATIONS FOR MECHANICAL BLOCK CHECK, ADJUSTMENT AND REPLACEMENT

Note: For removal of the cabinet, the boards, the cassette compartment, etc., refer to the service guides.

1-1. OPERATION WITHOUT CASSETTE COMPARTMENT ASSEMBLY AND TAPE

Note: The unit will not work if exposed to a strong light.

1-1-1. How to Trigger the Loading Operation (See Fig. 1-1.)

1) Supply power to the unit after removing the cabinet, the camera block, the cassette compartment assembly, etc., as indicated in the service guides. (This will enable operation of the mechanical deck.)
2) Cover the LED assembly with an opaque cap, etc. ❶.
3) Attach a piece of tape to the RECOG switch ❷ so that the pin is held down.
4) Push the EJECT lever ❸ in the direction of the arrow Ⓐ.

1-1-2. Setting the Playback Mode (See Fig. 1-1.)

1) Follow the procedures in section 1-1-1. above.
2) Put the rubber band ❹ around the S and T reels.
3) Press the PLAY switch of unit, then push the tension regulator arm assembly ❺ in the direction of the arrow Ⓑ when the T reel starts to rotate (the tension regulator band will be released, and the S reel will start rotating).
4) To stop operation, press the STOP switch.

1-1-3. Eject Operation (See Fig. 1-1.)

1) To eject, turn the EJECT switch on.

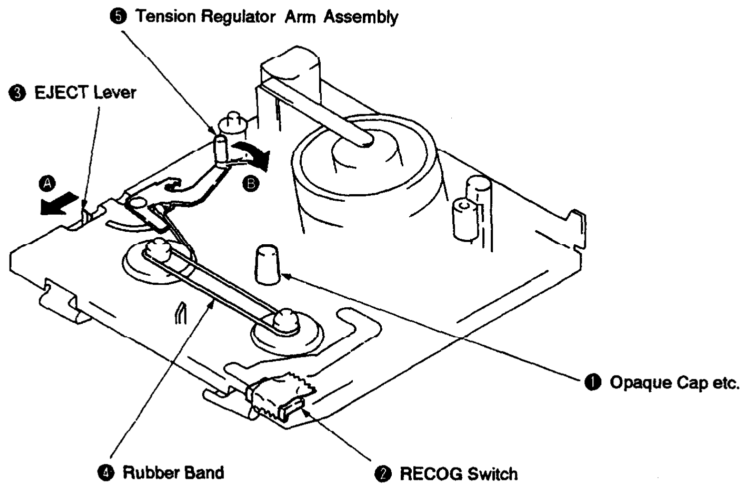


Fig. 1-1.

1-2. THE MODE SELECTOR

1-2-1. Name of Each Part (external) (See Fig. 1-2.)

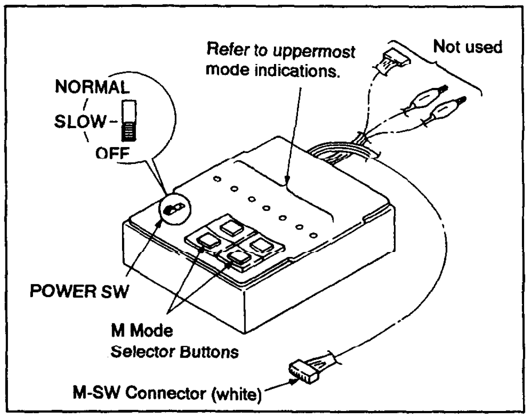

Refer to uppermost mode indications.
Not used
NORMAL
SLOW
OFF
POWER SW
M Mode Selector Buttons
M-SW Connector (white)

Fig. 1-2.

1-2-2. Connections (See Fig. 1-3.)

1) Mount the MODE SELECTOR III panel (Ref. No. J-9) ❶ onto the mode selector.
2) Attach the conversion connector (Ref. No. J-8) ❸ of MODE SELECTOR III to the 6-pin connector (white) ❷ of the mode selector M-SW.
3) Remove the FP-89 flexible board ❺ from the flexible connector ❹.
4) Attach the FP-89 flexible board ❺ to the flexible connector ❻ of the MODE SELECTOR III conversion connector ❸, then attach the 2-pin connector (white) ❽ of the loading motor to the 2-pin connector (white) ❼.

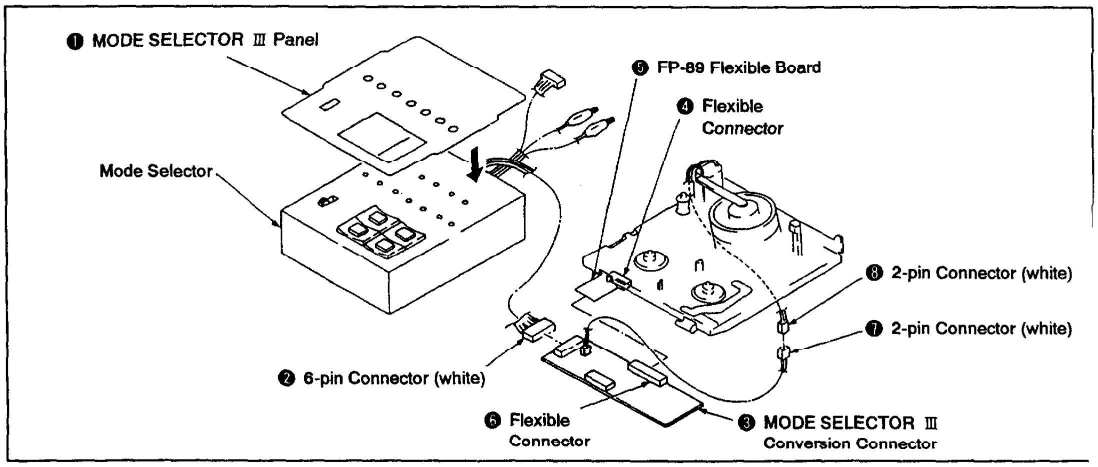

❶ MODE SELECTOR Ⅲ Panel
Mode Selector
❺ FP-89 Flexible Board
❹ Flexible Connector
❽ 2-pin Connector (white)
❼ 2-pin Connector (white)
❷ 6-pin Connector (white)
❻ Flexible Connector
❸ MODE SELECTOR Ⅲ Conversion Connector

Fig. 1-3.

1-2-3. Handling (See Figs. 1-2. and 1-4.)

- Use only the M mode selector buttons.
- Refer to mode indications on the uppermost part of the MODE SELECTOR III panel.
- If the right M mode selector button is kept pressed, the lit indication will change in the order of EJECT → (IA) → ULD → (IB) → STOP → (IC) → FWD.
- To change modes in the reverse direction (from FWD to EJECT), press the left selector button.

Note: For this U mechanism, the uppermost indicators on the MODE SELECTOR III panel are used. The IA, IB and IC indications light up during mode changes.

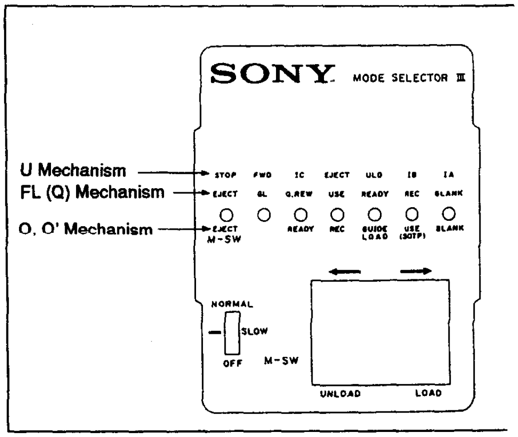

SONY MODE SELECTOR Ⅲ
U Mechanism
FL (Q) Mechanism
O, O' Mechanism
STOP FWD IC EJECT ULD IB IA
EJECT GL Q.REW USE READY REC BLANK
EJECT M-SW
READY REC GUIDE LOAD USE (SOTP) BLANK
NORMAL
SLOW
OFF
M-SW
UNLOAD
LOAD

Fig. 1-4.

2. PERIODICAL CHECK AND MAINTENANCE (See Fig. 2-1.)

The following periodical check and maintenance procedures are necessary to ensure proper operation and to protect the tapes as well as the unit, and the following maintenance procedures must be always carried out after repairing regardless of how long the unit has been used.

2-1. ROTARY DRUM ASSEMBLY CLEANING

1) While pressing a piece of chamois leather (Ref. No. J-2) moistened in cleaning fluid (Ref. No. J-1) lightly against the rotary drum, turn the rotary upper drum slowly counter-clockwise with your fingers.

Note: Do not drive the drum with the motor, and do not turn it clockwise.
Do not move the chamois leather vertically against the head tip; this can damage the head tip. Strictly follow the cleaning instructions above.

2-2. TAPE PATH CLEANING

1) Set the cassette compartment assembly to the eject state, or remove it. Then clean the tape path (guides No. 1 to 7, capstan shaft, pinch rollers) with a piece of chamois leather moistened in cleaning fluid (See Fig. 2-1).

2-3. DRIVE SYSTEM CLEANING

1) Clean the drive system (timing belt, reel table surface) with a piece of cloth moistened in cleaning fluid.

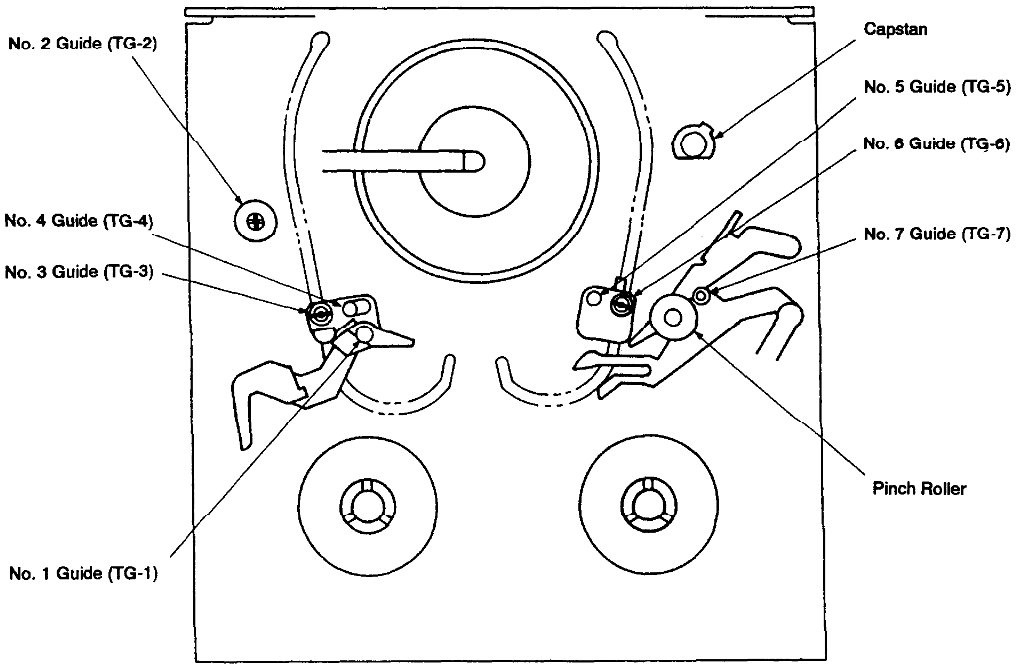


Fig. 2-1.

2-4. PERIODICAL CHECK ITEMS

○Cleaning ◎Lubrication ☆Check

Maintenance and Check Item		Operation time (H)										Remarks
		500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	
Cleaning and Demag-netizing	Tape path surfaces Cleaning	○	○	○	○	○	○	○	○	○	○	Do not oil.
	Rotary drum assembly cleaning and demagnetizing	○	○	○	○	○	○	○	○	○	○	Do not oil.
Drive System	Relay belt (short)	–	☆	–	☆	–	☆	–	☆	–	☆	3-728-866-01
	Relay belt (long)	–	☆	–	☆	–	☆	–	☆	–	☆	3-728-865-01
	Capstan shaft	–	◎	–	◎	–	◎	–	◎	–	◎	Take care that no oil gets on tape path surfaces.
	Idler pulley axle	–	◎	–	◎	–	◎	–	◎	–	◎	
	Loading motor	–	☆	–	☆	–	☆	–	☆	–	☆	1-541-612-11
Perfor-mance Check	Abnormal noise	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	
	Back tension measurement	–	☆	–	☆	–	☆	–	☆	–	☆	
	Brake system	–	☆	–	☆	–	☆	–	☆	–	☆	
	FWD, RVS torque measurement	–	☆	–	☆	–	☆	–	☆	–	☆	

Notes: When overhauling the unit, perform parts replacement referring to the table above.

Regarding Oil:

- Always use the specified oil (using oil of different viscosity, etc. can cause troubles of several kinds).
  Specified oil: Part No. 7-661-018-01
  (Mitsubishi Diamond Oil Hydrofluid EP56)
- Be sure that no dirt is mixed in the oil to be used on axle bearings. Use of dirty oil can result in bearing wear and burning.
- By "one drop of oil" is meant the quantity of oil adhering to the end of a a 2mm-diameter rod as shown in Fig. 2-2.

On grease:

- Use the specified grease.
  Grease: Part No. 7-662-010-08
  (Sony grease SGL-701)

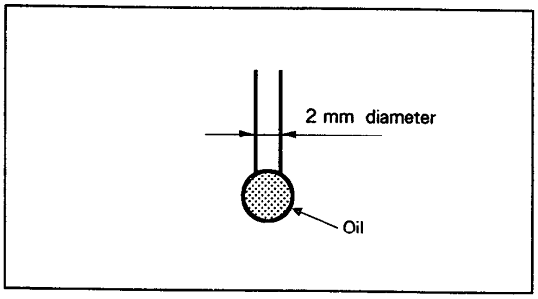


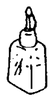
Fig. 2-2.

2-5. SERVICING TOOLS

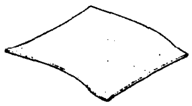
Ref. No.	Name	Part Code	Marking	Application, etc.
J-1	Cleaning fluid	Y-2031-001-0	–	
J-2	Chamois cloth	2-034-697-00	–	
J-3	Head demagnetizer	Commercially available	–	
J-4	Dental mirror Spare mirror	J-6080-029-A J-6080-030-1	SL-5052	Tape path
J-5	Alignment tape NTSC (WR5-1N) PAL (WR5-1C)	8-967-995-01 8-967-995-06		Tape path
J-6	FWD/RVS takeup torque cassette	J-6080-624-A	GD-2086	
J-7	Rotary drum jig	(Attached to the maintenance rotary upper drum)		
J-8	Mode selector III conversion connector	J-6082-021-A		General
J-9	Mode selector III panel	J-6082-023-A		General
J-10	Mode selector	J-6080-825-A		General
J-11	Hexagonal wrench detection (0.89 mm) or L wrench (0.89 mm)	7-700-766-01 7-700-736-06		Tape path
J-12	Sony grease (SGL-701)	7-662-010-08		

Other devices: Oscilloscope
Analog tester (20 kΩ)

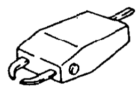
J-1



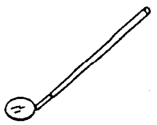
J-2



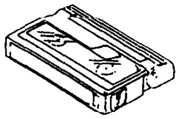
J-3



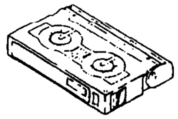
J-4



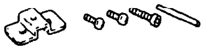
J-5



J-6

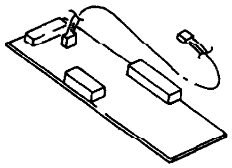


J-7

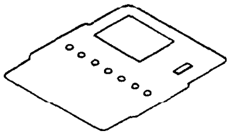


(Attached to the maintenance rotary upper drum)

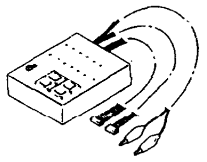
J-8



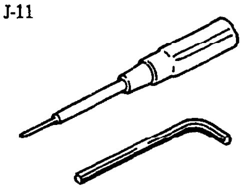
J-9



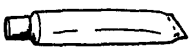
J-10



J-11



J-12



3. MECHANICAL BLOCK CHECK, ADJUSTMENT AND REPLACEMENT

Notes:
- Use the mode selector (Ref. No. J-10) for procedures in this chapter.
- Modes within a frame ☐ are those set by pressing the buttons of the mode selector.

3-1. HC ROLLER ASSEMBLY

1. Removal (See Fig. 3-1.)

1) Remove the screw ❶, then remove the HC roller assembly ❷.

2. Installation (See Fig. 3-1.)

1) Align the two dowels ❸ attached to the HC roller assembly ❷ with the two holes ❹ in the mechanism chassis.
2) Secure the HC roller assembly ❷ with the screw ❶.

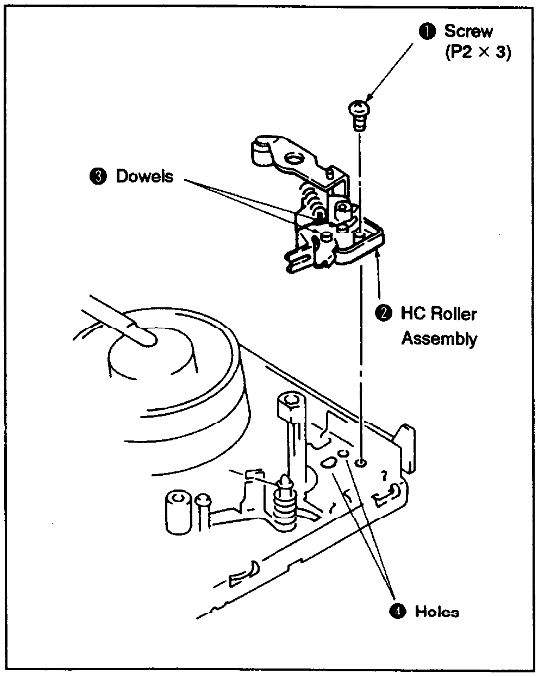

❶ Screw (P2 × 3)
❸ Dowels
❷ HC Roller Assembly
❹ Holes

Fig. 3-1.

3-2. GUIDE GUARD ASSEMBLY

1. Removal (See Fig. 3-2.)

Remove the screw ❶, then remove the guide guard assembly ❷.

2. Installation (See Fig. 3-2.)

1) Align the dowel ❸ attached to the guide guard assembly ❷ with the hole ❹.
2) Secure the guide guard assembly ❷ with the screw ❶.

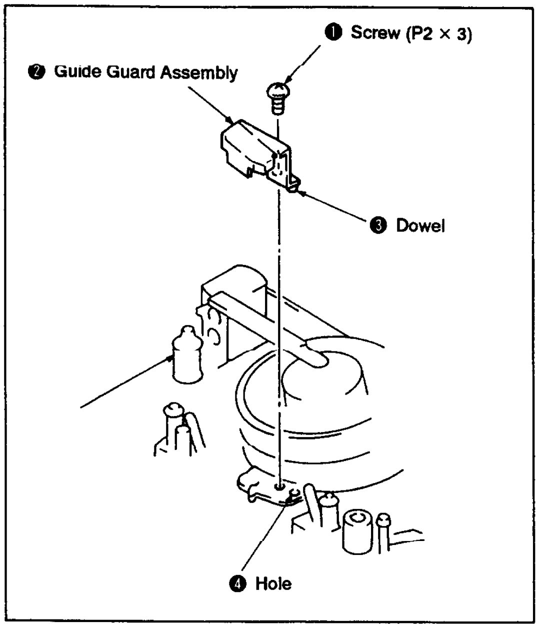

❶ Screw (P2 × 3)
❷ Guide Guard Assembly
❸ Dowel
❹ Hole

Fig. 3-2.

3-3. DC MOTOR (CAPSTAN MOTOR) ASSEMBLY

1. Removal (See Fig. 3-3.)

1) Set the ULD mode.
2) Turn the stopper ❶ in the direction of the arrow Ⓐ as far as it will go.
3) Remove the two screws ❷, then remove the DC motor ❸.

2. Installation (See Fig. 3-3.)

1) Align the two screwed dowels ❹ with the two holes ❺, then engage the toothed part ❻ with the connecting gear ❼.
2) Secure the DC motor assembly ❸ with the two screws ❷.
3) Turn the stopper ❶ in the direction of the arrow Ⓑ as far as it will go.

Note:
- When engaging the gears, take care not to damage their teeth.
- Do not leave any clearance between the DC motor ❸ and the chassis.
- Do not touch the capstan motor axle*, the oil seal* and the rotor*.

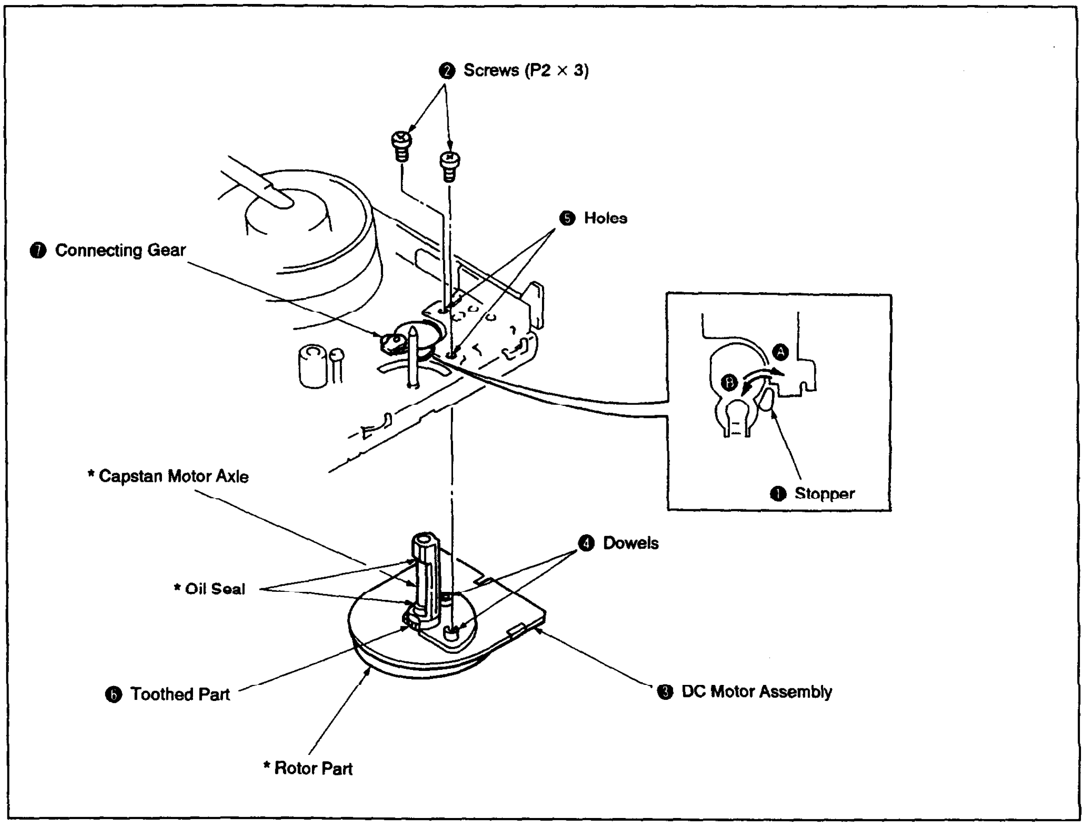

❷ Screws (P2 × 3)
❺ Holes
❼ Connecting Gear
Ⓐ
Ⓑ
❶ Stopper
* Capstan Motor Axle
❹ Dowels
* Oil Seal
❻ Toothed Part
❸ DC Motor Assembly
* Rotor Part

Fig. 3-3.

3-4. S BRAKE, T BRAKE

1. Removal (See Fig. 3-4.)

1) Remove the torsion coil spring (ST) ①.
2) Remove the axle holding pin ②, then remove the T brake ③.
3) Remove the axle holding pin ④, then remove the S brake ⑤.

2. Installation (See Fig. 3-4.)

1) While fitting the toothed part ⑥ into the notch ⑦, mount the S brake ⑤.
2) Insert the axle holding pin ④.
3) Insert the axle ⑧ to the S reel side of the brake release arm ⑨ so that the Ⓐ part comes closer to the drum than part Ⓑ, and mount the T brake ③.
4) Insert the axle holding pin ②.
5) Insert the torsion coil spring (ST) ① below the claw ⑪ of the axle ⑩, then hook it to two claws ⑫.

Note: Confirm that the claws of axle holding pins ② and ④ are not broken before assembling.

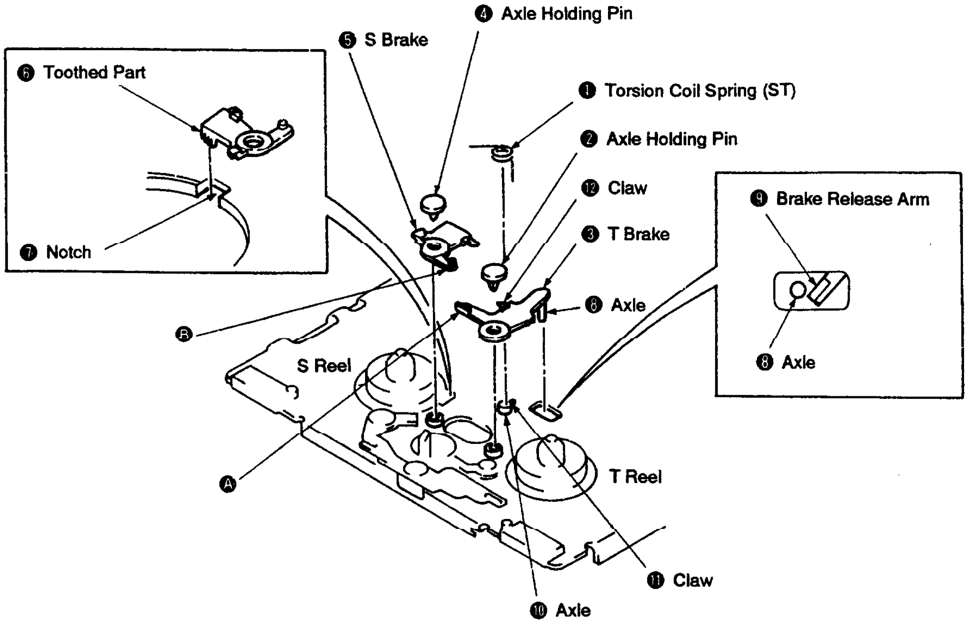

④ Axle Holding Pin
⑤ S Brake
⑥ Toothed Part
① Torsion Coil Spring (ST)
② Axle Holding Pin
⑫ Claw
⑨ Brake Release Arm
③ T Brake
⑦ Notch
⑧ Axle
Ⓑ
S Reel
⑧ Axle
Ⓐ
T Reel
⑪ Claw
⑩ Axle

Fig. 3-4.

3-5. LB BRAKE, AXLE HOLDING PINS

1. Removal (See Fig. 3-5.)

1) Remove the screw ❶, then remove the TL holding plate ❷.
2) Remove the axle holding pin ❸, then remove the LB brake ❹.
3) Remove the axle holding pin ❺, then remove the LB lever ❻.

2. Installation (See Fig. 3-5.)

1) Mount the LB lever ❻ matching it to pin ❼ of the LB gear, then secure it with the axle holding pin ❺.
2) Insert the pin ❽ into the notch ❾ of the LB lever ❻, then mount the LB brake ❹ while inserting the toothed part ❿ into the notch ⓫.
3) Insert the axle holding pin ❸.
4) Align the dowel ⓬ with the hole ⓭, then mount the TL holding plate and secure it with the screw ❶.

Note: Confirm that the claws of axle holding pins ❸ and ❺ are not broken before assembling.

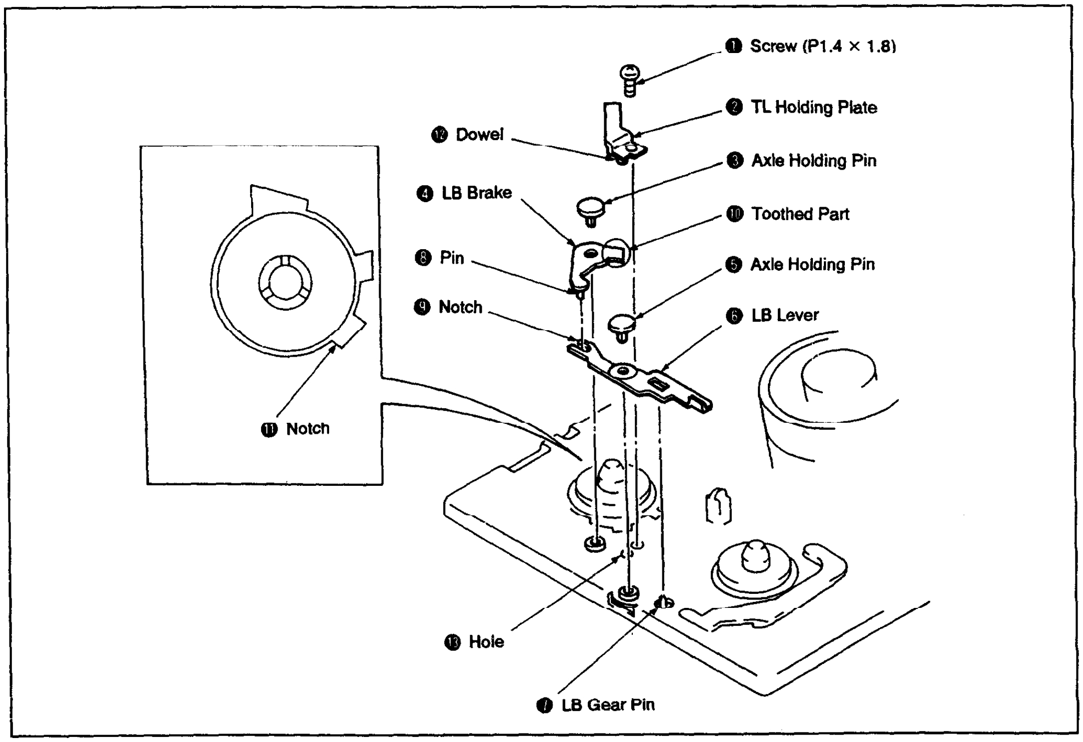

❶ Screw (P1.4 × 1.8)
❷ TL Holding Plate
⓬ Dowel
❸ Axle Holding Pin
❹ LB Brake
❿ Toothed Part
❽ Pin
❺ Axle Holding Pin
❾ Notch
❻ LB Lever
⓫ Notch
⓭ Hole
❼ LB Gear Pin

Fig. 3-5.

3-6. LB RELEASE ARM

1. Removal (See Fig. 3-6.)

1) While pushing the claw ① in the direction of the arrow, remove the LB release arm ②.

2. Installation (See Fig. 3-6.)

1) Fit the LB release arm ② to the axle ③, insert protrusions ⓐ, ⓑ, ⓒ, ⓓ into the three holes ④, then secure with the claw ①.

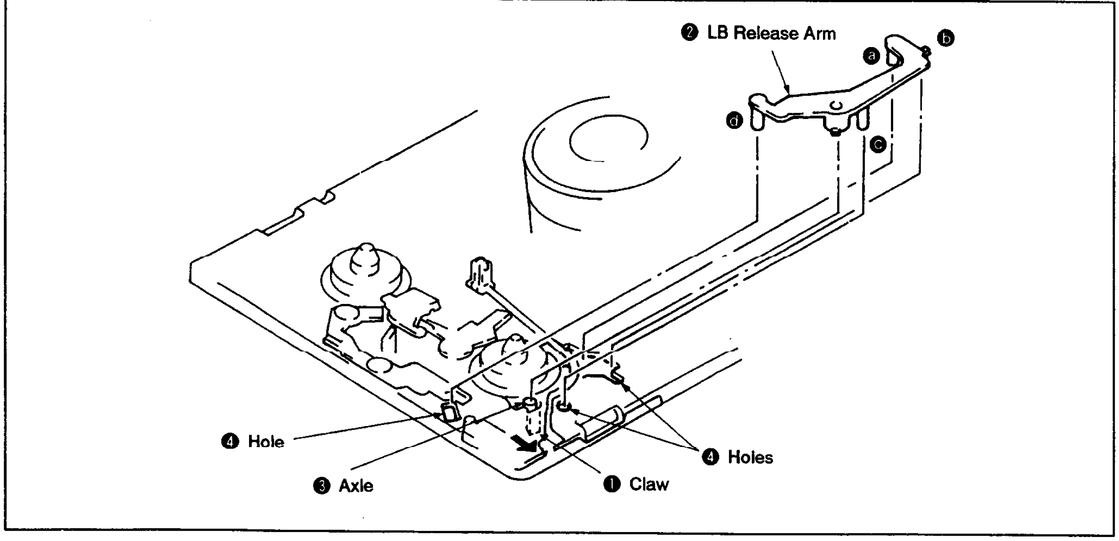

② LB Release Arm
ⓐ
ⓑ
ⓓ
ⓒ
④ Hole
③ Axle
① Claw
④ Holes

Fig. 3-6.

3-7. RK STOPPER, RK STOPPER ARMS

1. Removal (See Fig, 3-7.)

1) Remove the torsion coil spring (RK) ①.
2) Open the chassis claw ②, then remove the RK stopper arm ③.
3) Remove the RK stopper ④.

2. Installation (See Fig. 3-7.)

1) Mount the RK stopper ④ onto the axle ⑤.
2) Mount the RK stopper arm ③ onto the axle ⑥, insert Pin ⑩ into hole ⑪, then hook the claw ② of the chassis to the hole ⑦.
3) Insert the torsion coil spring (RK) ① into the axle ⑤, then hook it to claws ⑧ and ⑨.

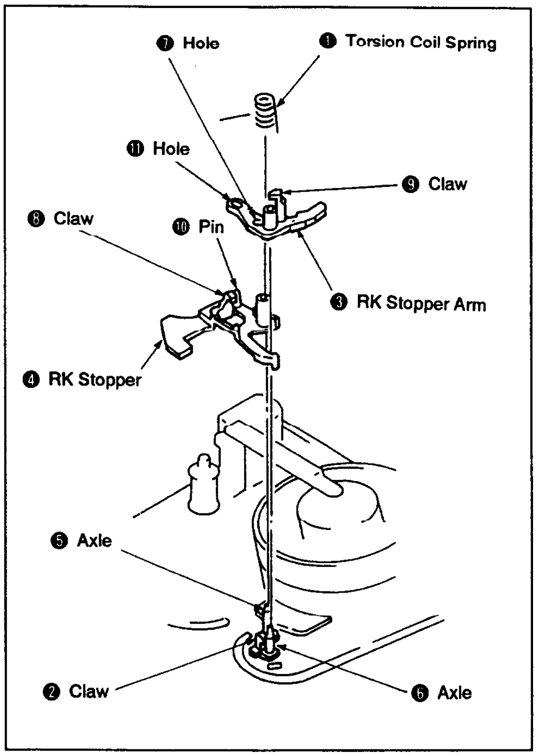

⑦ Hole
① Torsion Coil Spring
⑪ Hole
⑨ Claw
⑧ Claw
⑩ Pin
③ RK Stopper Arm
④ RK Stopper
⑤ Axle
② Claw
⑥ Axle

Fig. 3-7.

3-8. PINCH ARM ASSEMBLY, TG-7 ASSEMBLY

1. Removal (See Fig. 3-8.)

1) Set the IB mode.
2) Remove the stopper washer ❶, then remove the pinch arm assembly ❷.
3) Bend the claw ❹ inside hole ❸ in the direction of the arrow using a thin screwdriver or the like, then remove the TG-7 plate spring ❺.
4) Remove the TG-7 arm assembly ❻.

2. Installation (See Fig. 3-8.)

1) Grease the inner surfaces of hole ❼ (See Fig. A).
2) Insert the axle ❽ of the TG-7 arm assembly ❻ into the hole ❼.
3) Grease the shaded section ⓐ (See Fig. A).
4) Insert the TG-7 plate spring ❺ into the hole ❸, then secure it with the claw ❹.
5) Apply half a drop of oil to the axle ❾ (See Fig. B).
6) Fit the pinch arm assembly ❷ to the axle ❾ and insert the pinch roller sub arm assembly tab ❿ into the ⓑ part.
7) Install the stopper washer ❶.

Note:
- Take care not to grease the screw ⓫ of the TG-7 arm assembly ❻ (See Fig. A).
- When fitting the pinch arm assembly ❷ to the axle ❾, make sure that it does not touch the TG-7 guide ⓬ or the rubber roller ⓭.
- After assembling, be sure to perform tape path adjustment as described in section 4.

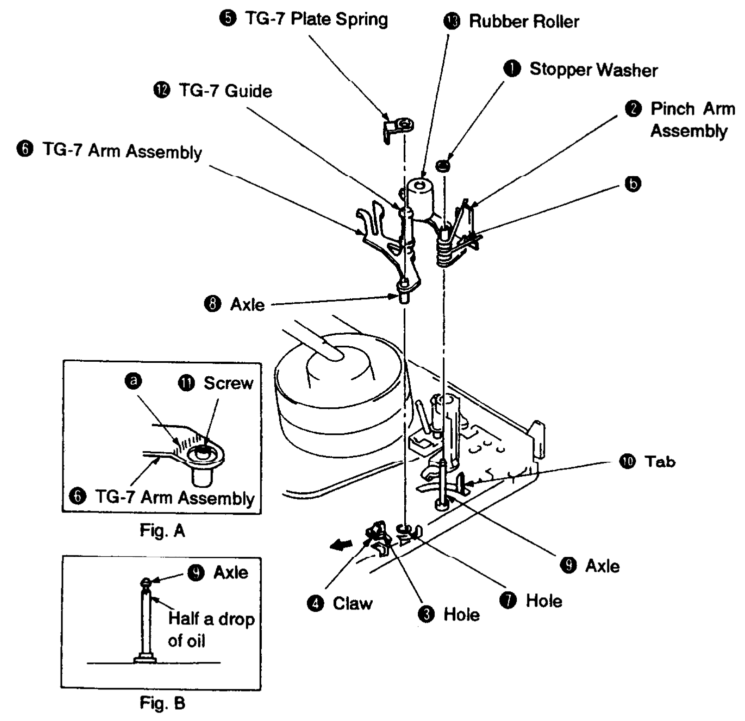

❺ TG-7 Plate Spring
⓭ Rubber Roller
❶ Stopper Washer
⓬ TG-7 Guide
❷ Pinch Arm Assembly
❻ TG-7 Arm Assembly
ⓑ
❽ Axle
ⓐ
⓫ Screw
❻ TG-7 Arm Assembly
Fig. A
❿ Tab
❾ Axle
Half a drop of oil
Fig. B
❾ Axle
❹ Claw
❸ Hole
❼ Hole

Fig. 3-8.

3-9. TG-2 ASSEMBLY

1. Removal (See Fig. 3-9.)

1) Remove the TG-2 upper flange assembly ❶.
2) Remove the TG-2 roller ❷, the TG-2 sleeve ❸, the TG-2 lower flange ❹ and the compression spring ❺.

2. Installation (See Fig. 3-9.)

1) Mount the compression spring ❺, the TG-2 lower flange ❹, the TG-2 sleeve ❸ and the TG-2 roller ❷ to the axle.
2) Secure the TG-2 upper flange ❶ to the axle by rotating it 4 to 6 turns.

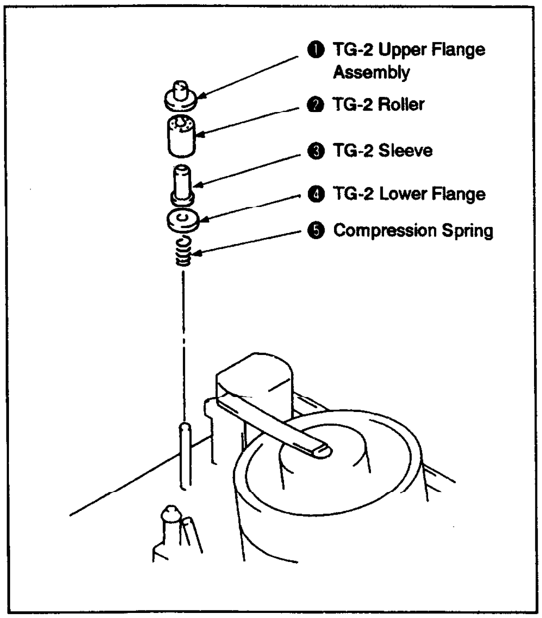

❶ TG-2 Upper Flange Assembly
❷ TG-2 Roller
❸ TG-2 Sleeve
❹ TG-2 Lower Flange
❺ Compression Spring

Fig. 3-9.

3. TG-2 Height Preset (see Fig. 3-10.)

1) Adjust height from the mechanism chassis upper surface to the TG-2 upper flange ❶ upper surface to 18.6 mm by turning the TG-2 upper flange ❶.

Note: After adjustment, be sure to perform tape path adjustment as described in section 4.

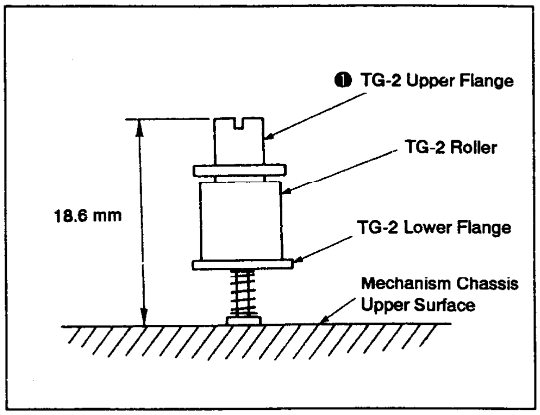

❶ TG-2 Upper Flange
TG-2 Roller
18.6 mm
TG-2 Lower Flange
Mechanism Chassis Upper Surface

Fig. 3-10.

3-10. S REEL TABLE ASSEMBLY, T REEL TABLE ASSEMBLY

1. Removal (See Fig. 3-11.)

1) Remove the S brake and T brake as described in section 3-4.
2) Remove the TL holding plate as described in section 3-5.
3) Remove the tension regulator band assembly as described in section 3-11.
4) Remove the S reel table assembly ❶.
5) Turn the stopper ❷ approx. 90 ° in the direction of the arrow Ⓐ.
6) While sliding the LB release arm ❸ in the direction of the arrow Ⓑ, remove the T reel table assembly ❹.

2. Installation (See Fig. 3-11.)

1) Apply half a drop of oil to the axle ❺ (See Fig. A).
2) Move the RK gear ❻ in the direction of the arrow Ⓒ and the TS brake ❼ in the direction of the arrow Ⓓ, putting them out of the way.
3) While sliding the LB release arm ❸ in the direction of the arrow Ⓑ, mount the T reel table assembly ❹ onto the axle ❺, then turn the stopper ❷ in the direction of the arrow Ⓔ as far as it will go.
4) Apply half a drop of oil to the axle ❽ (See Fig. B).
5) Move the RK gear ❻ in the direction of the arrow Ⓕ, the UL brake ❾ in the direction of the arrow Ⓖ and the LB brake ❿ in the direction of the arrow Ⓗ, putting them out of the way.
6) Mount the S reel table ❶ onto the axle ❽.
7) Mount the tension regulator band assembly as described in section 3-11.
8) Mount the TL holding plate as described in section 3-5.
9) Mount the S brake and T brake assemblies as described in section 3-4.

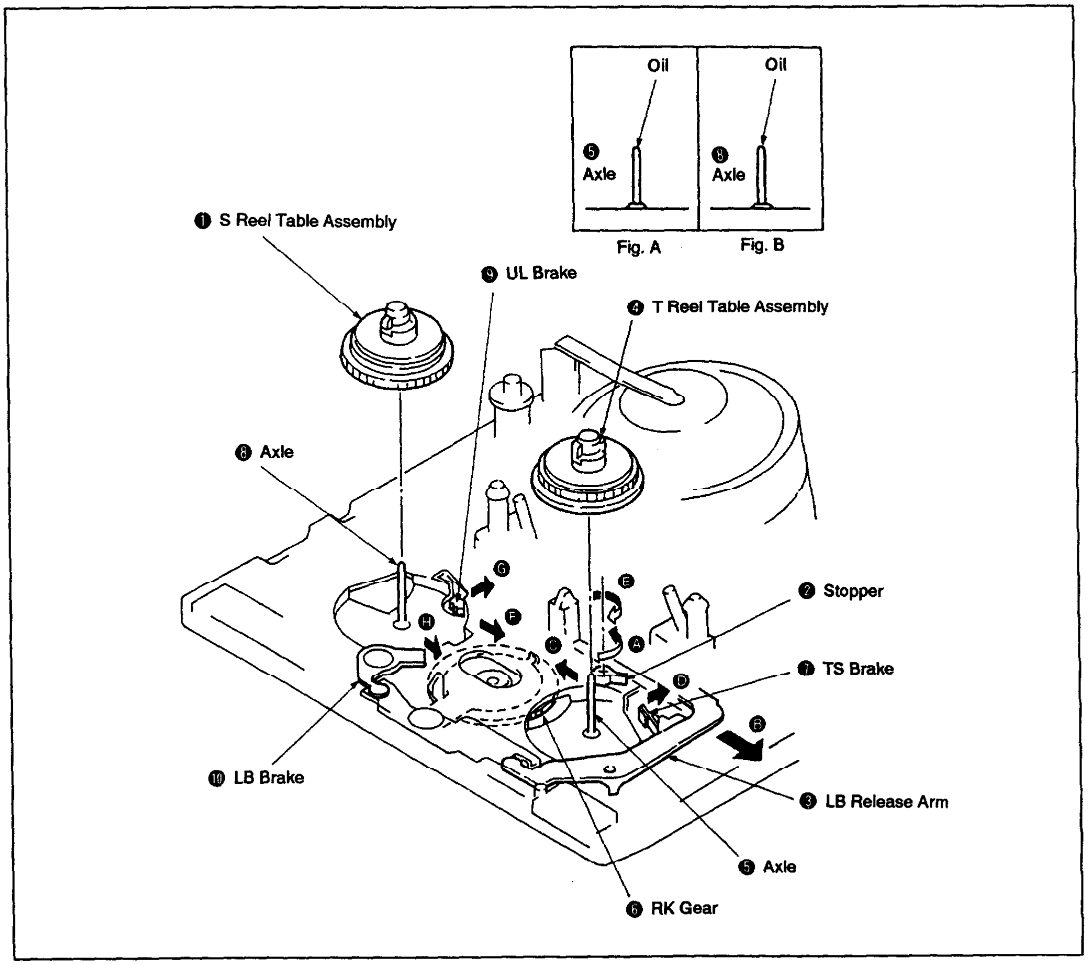

Oil
❺ Axle
Fig. A
Oil
❽ Axle
Fig. B
❶ S Reel Table Assembly
❾ UL Brake
❹ T Reel Table Assembly
❽ Axle
Ⓖ
Ⓔ
Ⓕ
Ⓗ
Ⓒ
Ⓐ
Ⓓ
Ⓑ
❷ Stopper
❼ TS Brake
❿ LB Brake
❸ LB Release Arm
❺ Axle
❻ RK Gear

Fig. 3-11.

3-11. TENSION REGULATOR BAND ASSEMBLY, TENSION REGULATOR ARM ASSEMBLY

1. Removal (See Fig. 3-12.)

1) Remove the TL holding plate as described in section 3-5.
2) Remove the screw ①.
3) Using a thin screwdriver or the like, remove the tension regulator band assembly ④ from the axle ③ of tension regulator arm assembly ②.
4) Remove the tension spring ⑤.
5) Remove the stopper washer ⑥ from the back of the mechanism chassis, then remove the tension regulator arm assembly ②.
6) Open the claw ⑦, then remove the adjust arm ⑧.

Note: When removing the tension regulator band assembly ④, take care not to twist or bend it, and not to touch the felt surface ⑨.

2. Installation (See Fig. 3-12.)

1) Engage the adjust arm ⑧ in the position shown in Fig. A, then close the claw ⑦.
2) Apply half a drop of oil to the hole ⑩.
3) Mount the tension regulator arm assembly ②, then insert it into the slot ⑪ so that the ⓐ part comes to the arrow Ⓐ side of the switch lever assembly (See Fig. B).
4) While holding the tension regulator arm assembly ② from the mechanism chassis front, secure it with the stopper washer ⑥ from the back.
5) Hook the R hook of the tension spring ⑥ to the adjust arm ⑧ as shown in the figure, then hook the opposite end to the tension regulator arm assembly ②.
6) Mount the tension regulator band assembly ④ onto the axle ③ of tension regulator arm assembly ②, and place it so that the felt surface ⑨ comes against the shaded portion of the S reel table assembly ⑫.
7) Mount the tension regulator plate ⑬ of the tension regulator band assembly ④ so that it is aligned with the dowel ⑭ of the mechanism chassis, then secure it temporarily with the screw ①.
8) Mount the TL holding plate as described in section 3-5.
9) Adjust tension regulator FWD position as described in section 3-12.
10) Perform adjust arm adjustment as described in section 3-22.

Note: When mounting the tension regulator band assembly ②, take care not to twist or bend it, and not to touch the felt surface ⑨.

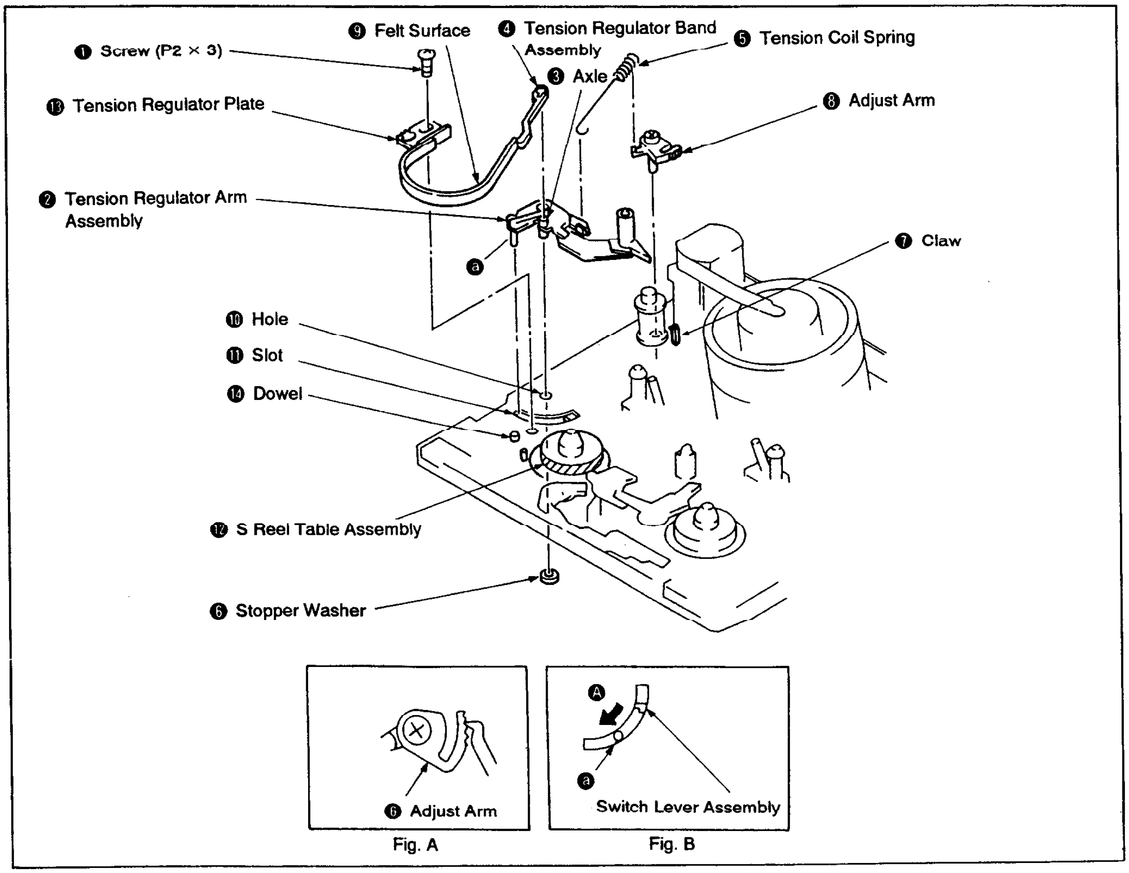

⑨ Felt Surface
④ Tension Regulator Band Assembly
⑤ Tension Coil Spring
① Screw (P2 × 3)
③ Axle
⑬ Tension Regulator Plate
⑧ Adjust Arm
② Tension Regulator Arm Assembly
⑦ Claw
ⓐ
⑩ Hole
⑪ Slot
⑭ Dowel
⑫ S Reel Table Assembly
⑥ Stopper Washer
⑧ Adjust Arm
Ⓐ
ⓐ
Switch Lever Assembly

Fig. A

Fig. B

Fig. 3-12.

3-12. TENSION REGULATOR FWD POSITION PRESET (See Fig. 3-13.)

1) Load a cassette tape and set the FWD mode.
2) Confirm whether the distance between ⓐ part of the tension regulator arm ❶ and the groove ❷ of the chassis is 1.1 ± 0.3 mm. If this distance is not within the specified range, remove the cassette tape and perform the following adjustment.
3) Loosen the fixing screw ❹ of the tension regulator band assembly ❸.
4) Slide the tension regulator plate ❺ in the direction of the arrow Ⓐ if the measured distance is over the specified range, and in the direction of the arrow Ⓑ if it is under that range. Then, fix it with the screw ❹.
5) Repeat steps 1) and 2) and confirm that the distance is within the specified range.

Note: Use a cassette with the tape advanced halfway.

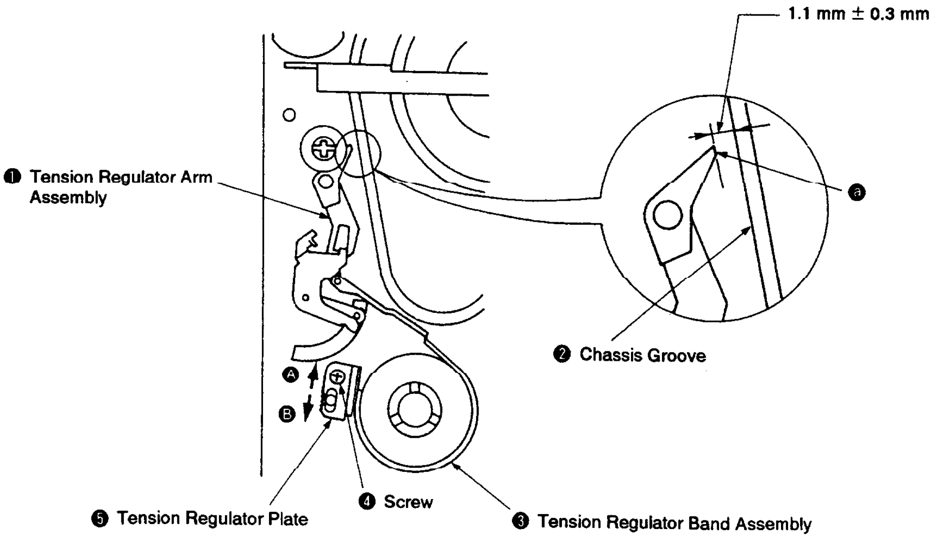

1.1 mm ± 0.3 mm
❶ Tension Regulator Arm Assembly
ⓐ
❷ Chassis Groove
Ⓐ
Ⓑ
❹ Screw
❺ Tension Regulator Plate
❸ Tension Regulator Band Assembly

Fig. 3-13.

3-13. DRUM ASSEMBLY, DEW SENSOR

1. Removal (See Fig. 3-14.)

1) Set the EJECT mode.
2) Remove the flexible board ❶ and the two connectors ❷.
3) Remove the guide guard assembly as described in section 3-2.
4) Remove the screw ❸, then remove the axle ground terminal ❹.
5) Remove the three screws ❺, then remove the drum assembly ❻ from the mechanism chassis.
6) Remove the connector ❿
7) Remove the screw ❼, then remove the dew sensor ❽.

Note:
- When removing the drum assembly ❻ from the mechanism chassis, take care not to cut the flexible board ❶ or the harness.
- Take care not to touch the head tip ❾.

2. Installation (See Fig. 3-14.)

1) Insert part ⓐ of the dew sensor ❽ into the notch ⓫ of the mechanism chassis, then secure it with the screw ❼.
2) Mount the connector ❿.
3) Clamp the harness ⓯ of the dew sensor ❽ with the reinforcing the claw ⓰ of the plate SS assembly (See Fig. A).
4) Insert the connector ❷ and the flexible board ❶ into the hole ⓬ of the mechanism chassis, align the drum assembly ❻ with the two dowels ⓭ and secure it with the three screws ❺.
5) Align the axle ground terminal ❷ with the two dowels ⓮ of the mechanism chassis and secure it with the screw ❸.
6) Mount the guide guard assembly as described in section 3-2.
7) Mount the two connectors ❷ and the flexible board ❶.

Note:
- Take care not to cut the flexible board ❶ or the harness ⓯.
- Take care not to touch the head tip ❾.
- After assembling, be sure to perform Tape Path Adjustment following instructions in section 4.

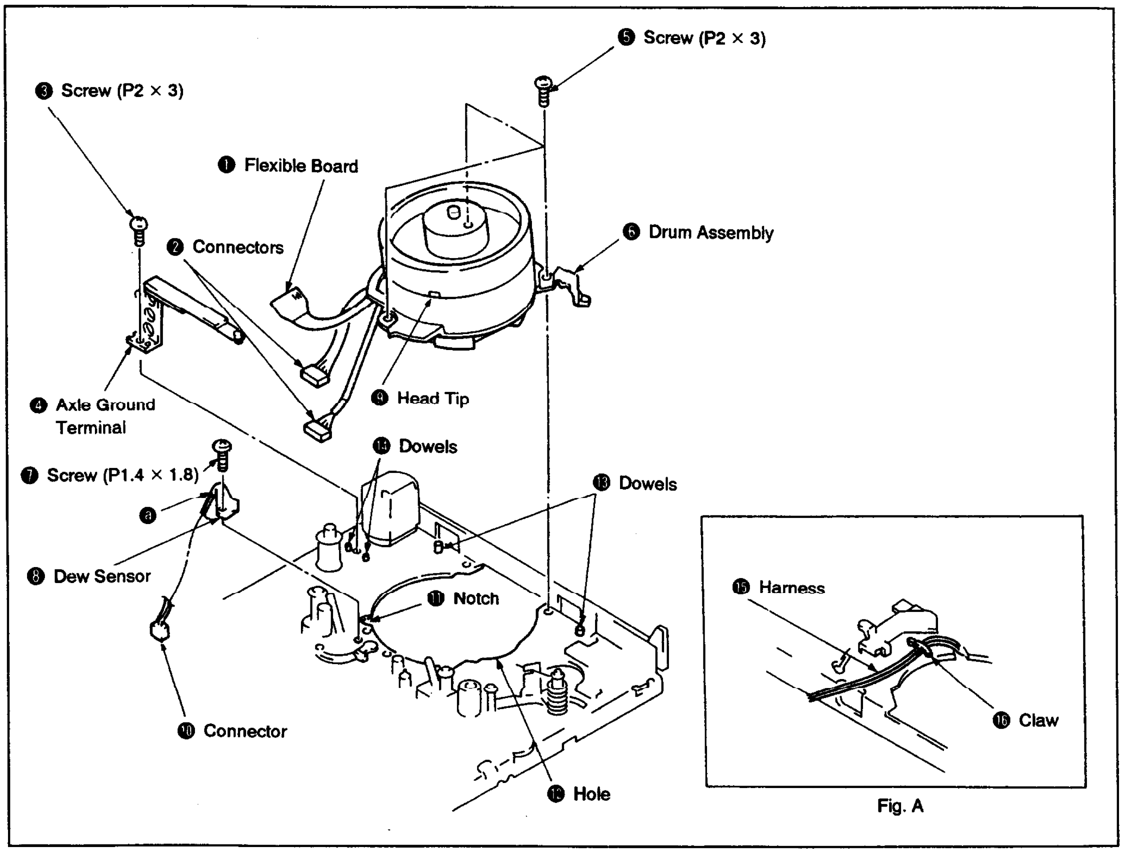

❺ Screw (P2 × 3)
❸ Screw (P2 × 3)
❶ Flexible Board
❷ Connectors
❻ Drum Assembly
❹ Axle Ground Terminal
❾ Head Tip
⓮ Dowels
❼ Screw (P1.4 × 1.8)
ⓐ
⓭ Dowels
❽ Dew Sensor
⓫ Notch
⓯ Harness
⓰ Claw
❿ Connector
⓬ Hole
Fig. A

Fig. 3-14.

3-14. EJECT LEVER, SWITCH LEVER ASSEMBLY, PINCH ROLLER SUB ARM ASSEMBLY

1. Removal (See Fig. 3-15.)

1) Remove the DC motor (capstan motor) as described in section 3-3.
2) Set the STOP mode.
3) Remove the claw ❶, then remove the eject lever ❷.
4) Remove the stopper washer ❸, then remove the switch lever assembly ❹.
5) Remove the pinch roller load spring ❺.
6) Remove the stopper washer ❻, then remove the pinch roller sub arm assembly ❼.

2. Installation (See Fig. 3-15.)

1) Grease the axle ❽ (See Fig. A).
2) Assemble by inserting ⓐ part of the pinch roller sub arm assembly ❼ into the slot ❾, then insert the pin ❿ into the loading lever assembly notch ⓫.
3) Secure with the stopper washer ❻.
4) Mount the pinch roller load spring ❺ by catching its ⓑ end between the claw ⓬ and the chassis side and its ⓒ end to the claw ⓬.
5) Apply half a drop of oil to the axle ⓭ (See Fig. B).
6) Align the groove ⓮ of the switch lever assembly ❹ with the mode detector switch protrusion ⓯, mount it on the axle ⓭, then insert the pin ⓰ into the drive gear (left) assembly ⓱ outer groove.
7) Secure with the stopper washer ❸.
8) Mount the eject lever ❷ and close the claw ❶.
9) Mount the DC motor (capstan motor) as described in section 3-3.

Note: When mounting the switch lever assembly ❹ onto the axle ⓭ with the tension regulator arm assembly installed, set the pin ⓰ to the arrow Ⓐ side of the switch lever assembly ❹.

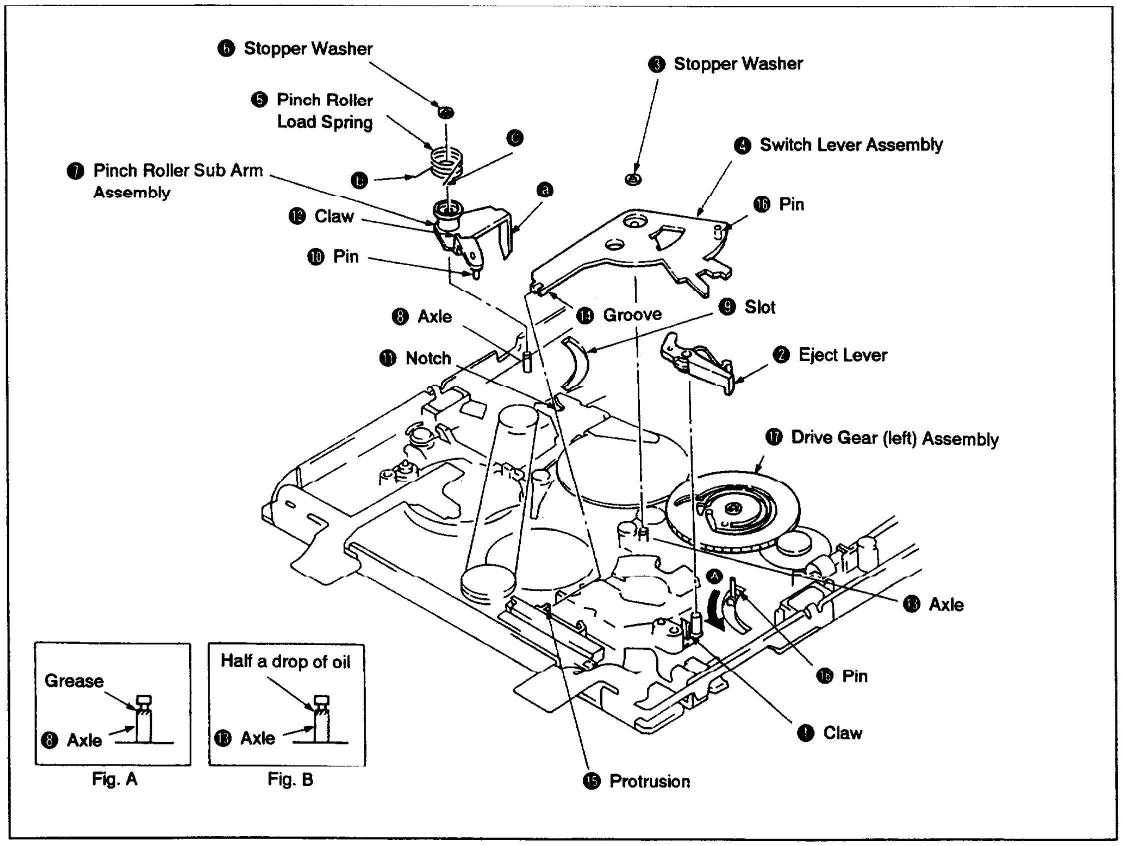

❻ Stopper Washer
❺ Pinch Roller Load Spring
ⓒ
❼ Pinch Roller Sub Arm Assembly
ⓑ
ⓐ
⓬ Claw
❿ Pin
❽ Axle
⓫ Notch
❸ Stopper Washer
❹ Switch Lever Assembly
⓰ Pin
⓮ Groove
❾ Slot
❷ Eject Lever
⓱ Drive Gear (left) Assembly
Ⓐ
⓭ Axle
⓰ Pin
❶ Claw
⓯ Protrusion
Grease
❽ Axle
Half a drop of oil
⓭ Axle

Fig. A

Fig. B

Fig. 3-15.

3-15. TIMING BELT (L) , RC GEAR ASSEMBLY, LOADING LEVER ASSEMBLY, TIMING BELT (S), CONNECTING GEAR ASSEMBLY

1. Removal (See Fig. 3-16.)

1) Remove the DC motor (capstan motor) as described in section 3-3.
2) Remove the pinch roller sub arm assembly as described in section 3-14.
3) Set the STOP mode.
4) Remove the stopper washer ❶ , then remove the RC gear assembly ❷ from the axle ❹ with the timing belt (L) ❸ attached.
5) Remove the timing belt (L) ❸ from the idler pulley assembly ❺ .
6) Remove the stopper washer ❻ and remove the loading lever assembly ❽ while pushing the claw ❼ in the direction of the arrow Ⓐ .
7) Turn the stopper ❾ approx. 90 ° in the direction of the arrow Ⓑ .
8) Remove the connecting gear assembly ⓫ from the axle ⓰ with the timing belt (S) ❿ attached.
9) Remove the timing belt (S) ❿ from the idler pulley assembly ❺ .

Note: When removing the connecting gear ⓫ , take care not touch the flange section ⓑ .

2. Installation (See Fig. 3-16.)

1) Apply half a drop of oil to the axle ⓰ (See Fig. F).
2) Hook one end of the timing belt (S) ❿ onto the connecting gear assembly ⓫ and the other end onto gear ⓓ of the idler pulley assembly ❺ . (Refer to the figure.)
3) Mount the connecting gear assembly ⓫ with the timing belt (S) ❿ attached to the axle ⓰ .
4) Turn the stopper ❾ in the direction of the arrow Ⓒ as far as it will go.
5) Apply half a drop of oil to the axle ⓬ (See Fig. A).
6) Fit the loading lever assembly ❽ to the axle ⓬ , secure the ⓐ part with the claw ❼ and place the pin ⓭ into the groove of the drive gear (right) assembly ⓮ .
7) Install the stopper washer ❻ .
8) Place the timing belt (L) ❸ around the gears of the RC gear assembly ❷ indicated in Fig. B, and its opposite side around the gear Ⓒ of the idler pulley assembly ❺ . (See Fig. E.)
9) Mount the RC gear assembly ❷ onto the axle ❹ with the timing belt (L) ❸ attached, and engage it with the gear of the RK gear assembly ⓯ .
10) Install the stopper washer ❶ .
11) Grease parts of the loading lever assembly ❽ indicated in Fig. C.
12) Mount the pinch roller sub arm assembly as described in section 3-14.
13) Mount the DC motor (capstan motor) as described in section 3-3.

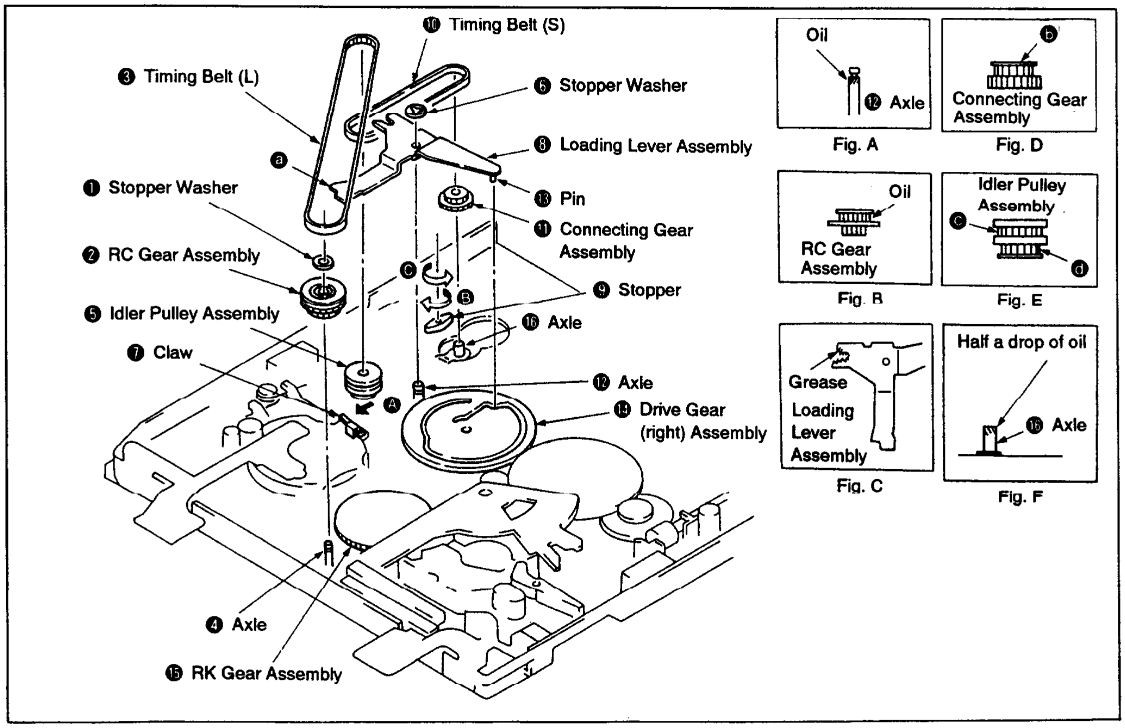

❿ Timing Belt (S)
❸ Timing Belt (L)
❻ Stopper Washer
❽ Loading Lever Assembly
ⓐ
❶ Stopper Washer
⓭ Pin
⓫ Connecting Gear Assembly
❷ RC Gear Assembly
Ⓒ
Ⓑ
❾ Stopper
❺ Idler Pulley Assembly
⓰ Axle
❼ Claw
⓬ Axle
Ⓐ
⓮ Drive Gear (right) Assembly
❹ Axle
⓯ RK Gear Assembly
Oil
⓬ Axle
Fig. A
ⓑ
Connecting Gear Assembly
Fig. D
Oil
RC Gear Assembly
Fig. B
Idler Pulley Assembly
ⓒ
ⓓ
Fig. E
Grease
Loading Lever Assembly
Fig. C
Half a drop of oil
⓰ Axle
Fig. F

Fig. 3-16.

3-16. IDLER PULLEY, TS BRAKE ASSEMBLY, LB GEAR ASSEMBLY, RK GEAR ASSEMBLY

1. Removal (See Fig. 3-17.)

1) Remove the DC motor (capstan motor) as described in section 3-3.
2) Remove the switch lever assembly as described in section 3-14.
3) Remove the timing belt (L), the RC gear assembly, the loading lever assembly, the timing belt (S) and the connecting gear assembly described in section 3-15.
4) Set the STOP mode.
5) Remove the stopper washer ❶, then remove the idler pulley ❷.
6) Open the claw ❸, then remove the TS brake assembly ❹.
7) Remove the torsion coil spring (LB) ❺.
8) Remove the stopper washer ❻, then remove the LB gear assembly ❼.
9) Remove the RK gear assembly ❽.

Note: When removing the idler pulley ❷, take care not to touch the flange section ⓐ. (See Fig. C.)

2. Installation (See Fig. 3-17.)

1) Apply half a drop of oil to the axle ❾ (See Fig. A).
2) Mount the RK gear assembly ❽ onto the axle ❾, keeping it in horizontal position.
3) Apply half a drop of oil to the axle ❿ (See Fig. B).
4) Mount the LB gear assembly ❼ onto the axle ❿ and secure it with the stopper washer ❻.
5) Insert the torsion coil spring (LB) ❺ into the axle ⓫, then hook it to the mechanism chassis notch ⓬ and to the tab ⓭.
6) Mount the TS brake assembly ❹ and close the claw ❸.
7) Apply half a drop of oil to the axle ⓰ (See Fig. D).
8) Mount the idler pulley ❷ onto the axle ⓰, then secure it with the stopper washer ❶.
9) Mount the timing belt (L), the RC gear assembly, the loading lever assembly, the timing belt (S) and the connecting gear assembly as described in section 3-15.
10) Mount the switch lever assembly as described in section 3-14.
11) Mount the DC motor (capstan motor) as described in section 3-3.

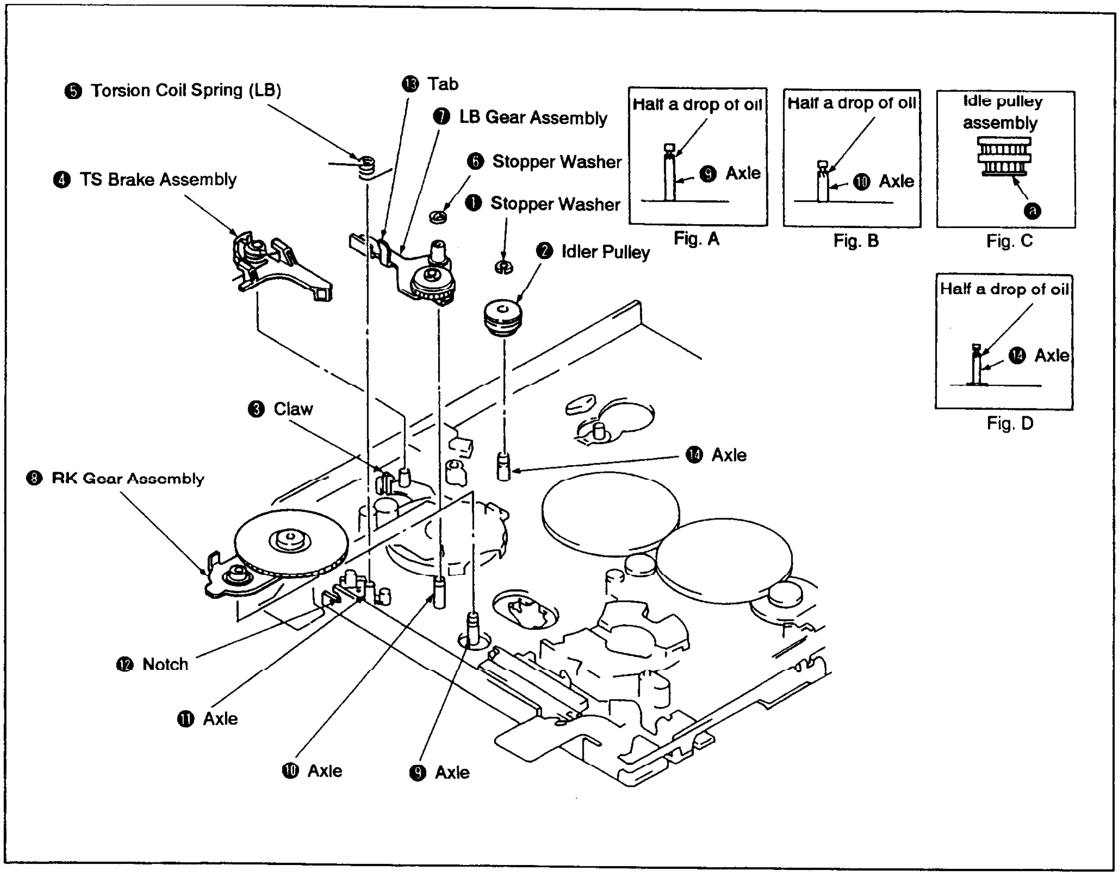

❺ Torsion Coil Spring (LB)
⓭ Tab
❼ LB Gear Assembly
❻ Stopper Washer
❹ TS Brake Assembly
❶ Stopper Washer
❷ Idler Pulley
❸ Claw
⓮ Axle
❽ RK Gear Assembly
⓬ Notch
⓫ Axle
❿ Axle
❾ Axle
Half a drop of oil
❾ Axle
Fig. A
Half a drop of oil
❿ Axle
Fig. B
Idle pulley assembly
ⓐ
Fig. C
Half a drop of oil
⓮ Axle
Fig. D

Fig. 3-17.

3-17. UL GEAR, UL BRAKE, UL ARM, LB PLATE SPRING

1. Removal (See Fig. 3-18.)

1) Remove the switch lever assembly as described in section 3-14.
2) Remove the stopper washer ❶ , then remove the UL gear ❷.
3) Remove the UL arm ❸ , the 1.6 mm-diameter poly washer ❹ and the LB plate spring ❺.
4) Remove the UL brake ❻.

2. Installation (See Fig. 3-18.)

1) Mount the UL brake ❻.
2) Apply half a drop of oil to the axle ❼ (See Fig. A).
3) Mount the LB plate spring ❺ to the axle ❼ as shown in Fig. B, then install the 1.6mm-diameter poly washer ❹.
4) Mount the UL arm ❸ to the axle ❼ so that the protrusion ❽ comes into the groove ❾ of the UL brake ❻.
5) Mount the UL gear ❷ to the axle ❼ and engage it with the gear of the drive gear (left) assembly ❿.
6) Install the stopper washer ❶.
7) Mount the switch lever assembly as described in section 3-14.

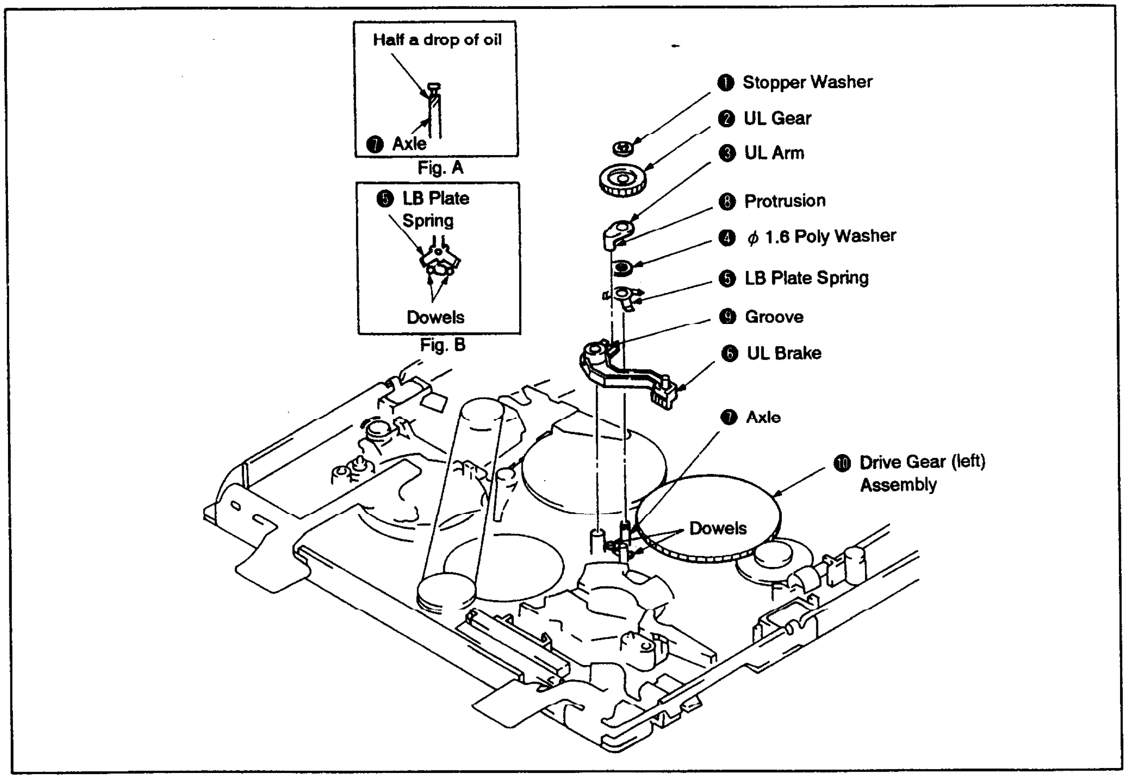

Half a drop of oil
❼ Axle
Fig. A
❺ LB Plate Spring
Dowels
Fig. B
❶ Stopper Washer
❷ UL Gear
❸ UL Arm
❽ Protrusion
❹ ϕ 1.6 Poly Washer
❺ LB Plate Spring
❾ Groove
❻ UL Brake
❼ Axle
❿ Drive Gear (left) Assembly
Dowels

Fig. 3-18.

3-18. COASTER (RIGHT) ASSEMBLY, DRIVE GEAR (RIGHT) ASSEMBLY

1. Removal (See Fig. 3-19.)

1) Remove the DC motor (capstan motor) as described in section 3-3.
2) Remove the drum unit as described in section 3-13.
3) Remove the switch lever assembly as described in section 3-14.
4) Remove the timing belt (L) , the RC gear assembly and the loading lever assembly as described in section 3-15.
5) Set the STOP mode.
6) Remove the screw ❶ , then remove the coaster plate spring ❷ and the coaster (right) assembly ❸ .
7) Remove the two screws ❹ , then remove the reinforcing plate TT ❺ .
8) Remove the stopper washer 1.5 ❻ , then remove the drive gear (right) assembly ❼ .

2. Installation (See Fig. 3-19.)

1) Grease the points of the mechanism chassis shown in Fig A.
2) Apply half a drop of oil to the axle ❽ (See Fig. F).
3) Grease pin ❾ , axle ❿ and dowel ⓮ of the coaster (right) assembly ❸ (See Fig. D).
4) Mount by aligning the pin ❾ and the axle ❿ with the slot ⓫ of the mechanism chassis.
5) Move the brake release arm ⓬ in the direction of the arrow Ⓐ to put it out of the way.
6) Mount the drive gear (right) assembly ❼ to the axle ❽ , and engage it with the drive gear (left) assembly ⓭ as shown in Fig. B.
7) Align the ⓐ part with the ⓑ part, and the hole ⓮ with the pin ❾ of the coaster (right) assembly ❸ .
8) Install the stopper washer 1.5 ❻ .
9) Mount by aligning the coaster plate spring ❷ with the axle ❿ of the coaster (right) assembly ❸ and pin ❾ , then secure with the screw ❶ .
10) Mount the reinforcing plate TT ❺ aligning it with the dowel ⓯, then tighten the two screws ❹ in the indicated order.
11) Grease the points indicated in Figs. C and E.
12) Mount the timing belt (L) , the RC gear assembly and the loading lever assembly as described in section 3-15.
13) Mount the switch lever assembly as described in section 3-14.
14) Mount the drum unit as described in section 3-13.
15) Mount the DC motor (capstan motor) as described in section 3-3.

Note:
- Screw ❶ should be tightened with a tightening torque of approx. 500g•cm. If tightened too much, the coaster (right) assembly ❸ and the coaster plate spring ❷ will be deformed.
- After installing, be sure to perform tape path adjustment as described in section 4.

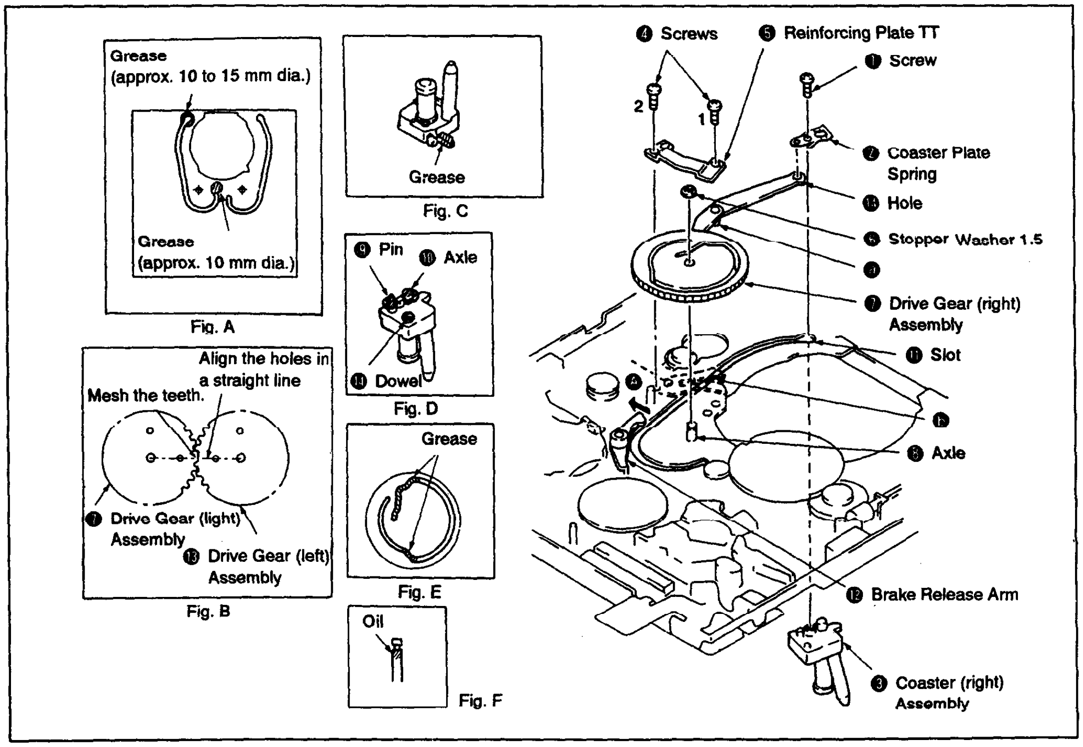

Grease
(approx. 10 to 15 mm dia.)
Grease
(approx. 10 mm dia.)
Fig. A
Align the holes in a straight line
Mesh the teeth.
❼ Drive Gear (light) Assembly
⓭ Drive Gear (left) Assembly
Fig. B
Grease
Fig. C
❾ Pin
❿ Axle
⓮ Dowel
Fig. D
Grease
Fig. E
Oil
Fig. F
❹ Screws
❺ Reinforcing Plate TT
❶ Screw
2
1
❷ Coaster Plate Spring
⓭ Hole
❻ Stopper Washer 1.5
ⓐ
❼ Drive Gear (right) Assembly
⓫ Slot
Ⓐ
ⓑ
❽ Axle
⓬ Brake Release Arm
❸ Coaster (right) Assembly

Fig. 3-19.

3-19. COASTER (LEFT) ASSEMBLY, DRIVE GEAR (LEFT) ASSEMBLY

1. Removal (See Fig. 3-20.)

1) Remove the DC motor (capstan motor) as described in section 3-3.
2) Remove the drum assembly as described in section 3-13.
3) Remove the switch lever assembly and the pinch roller sub-arm assembly as described in section 3-14.
4) Remove the timing belt (L), the RC gear assembly and the loading lever assembly as described in section 3-15.
5) Remove the coaster (right) assembly and the drive gear (right)assembly as described in section 3-18.
6) Remove the screw ❶, then remove the coaster plate spring ❷ and the coaster (left) assembly ❸.
7) Remove the two screws ❹, then remove the reinforcing plate SS assembly ❺.
8) Remove the stopper washer 1.5 ❻, then remove the drive gear (left) assembly ❼.

2. Installation (See Fig. 3-20.)

1) Grease the points of the mechanism chassis shown in Fig A.
2) Apply half a drop of oil to the axle ❽ (See Fig. E).
3) Grease pin ❾, axle ❿ and dowel ⓰ of the coaster (left) assembly ❸ (See Fig. B).
4) Mount by aligning the pin ❾ and the axle ❿ with the slot ⓫ of the mechanism chassis.
5) Fit the drive gear (left) assembly ❼ to the axle ❽, and mount so that the gear engages with the wheel gear ⓭ and the UL gear ⓮.
6) Align the ⓐ part with the slot ⓫, and the hole ⓮ with the pin ❾ of the coaster (left) assembly ❸.
7) Install the stopper washer 1.5 ❻.
8) Mount by aligning the coaster plate spring ❷ with the axle ❿ and pin ❾ of the coaster (left) assembly ❸, then secure with the screw ❶.
9) Mount the reinforcing plate SS assembly ❺ aligning it with the dowel ⓯, then tighten the two screws ❹ in the indicated order.
10) Grease points indicated in Figs. C and D.
11) Mount the coaster (right) assembly and the drive gear (right)assembly as described in section 3-18.
12) Mount the timing belt (L), the RC gear assembly and the loading lever assembly as described in section 3-15.
13) Mount the switch lever assembly and the pinch roller sub arm assembly as described in section 3-14.
14) Mount the drum assembly as described in section 3-13.
15) Mount the DC motor (capstan motor) as described in section 3-3.

Note:
- Screw ❶ should be tightened with a tightening torque of approx. 500g•cm. If tightened too much, the coaster (right) assembly ❸ and the coaster plate spring ❷ will be deformed.
- After installing, be sure to perform tape path adjustment as described in section 4.

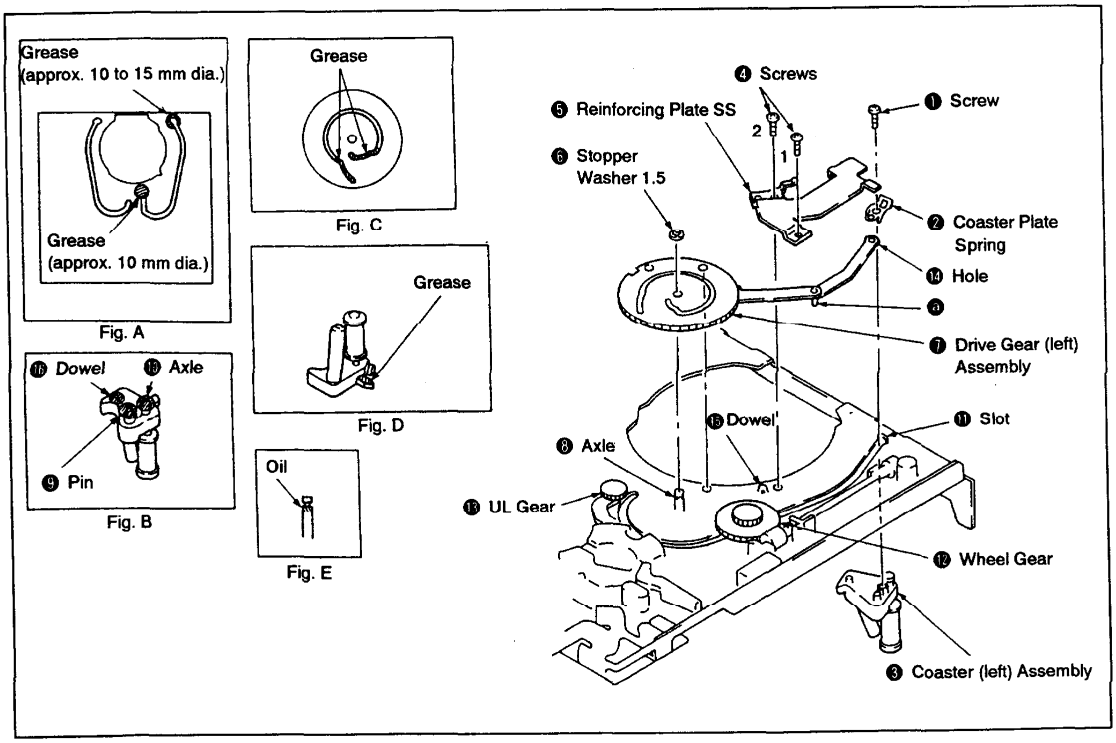

Grease
(approx. 10 to 15 mm dia.)
Grease
(approx. 10 mm dia.)
⓰ Dowel
❿ Axle
❾ Pin
Grease
Grease
Oil
❹ Screws
❺ Reinforcing Plate SS
2
1
❻ Stopper Washer 1.5
❶ Screw
❷ Coaster Plate Spring
⓮ Hole
ⓐ
❼ Drive Gear (left) Assembly
⓫ Slot
⓯ Dowel
❽ Axle
⓭ UL Gear
⓬ Wheel Gear
❸ Coaster (left) Assembly

Fig. A

Fig. B

Fig. C

Fig. D

Fig. E

Fig. 3-20.

3-20. LOADING MOTOR, BRAKE RELEASE ARM, WHEEL GEAR, WORM ASSEMBLY

1. Removal (See Fig. 3-21.)

1) Remove the DC motor (capstan motor) as described in section 3-3.
2) Remove the switch lever assembly and the pinch roller sub arm assembly as described in section 3-14.
3) Remove the timing belt (L), the RC gear assembly and the loading lever assembly as described in section 3-15.
4) Remove the drive gear (right) assembly as described in section 3-18.
5) Remove the drive gear (left) assembly as described in section 3-19.
6) Remove the two screws ❶, then remove the loading motor assembly ❷.
7) Remove the brake release arm ❸.
8) Remove the stopper washer ❹, then remove the wheel gear ❺.
9) Remove the worm assembly ❻ from the six claws ❼.

2. Installation (See Fig. 3-21.)

1) Mount the worm assembly ❻, matching it to the six claws ❼.
2) Grease the shaded parts of the worm assembly ❻ (five places) (see Fig A).
3) Apply half a drop of oil to the axle ❽ (See Fig. B).
4) Fit the wheel gear ❺ to the axle ❽ and engage it with the gear of the worm assembly ❻.
5) Mount the brake release arm ❸.
6) Grease the whole perimeter of the gear of the loading motor assembly ❷.
7) Align the loading motor assembly ❷ with the mechanism chassis and secure it with the two screws ❷.
8) Mount the drive gear (left) assembly as described in section 3-19.
9) Mount the drive gear (right) assembly as described in section 3-18.
10) Mount the timing belt (L), the RC gear assembly and the loading lever assembly as described in section 3-15.
11) Mount the switch lever assembly and the pinch roller sub arm assembly as described in section 3-14.
12) Mount the DC motor (capstan motor) as described in section 3-3.

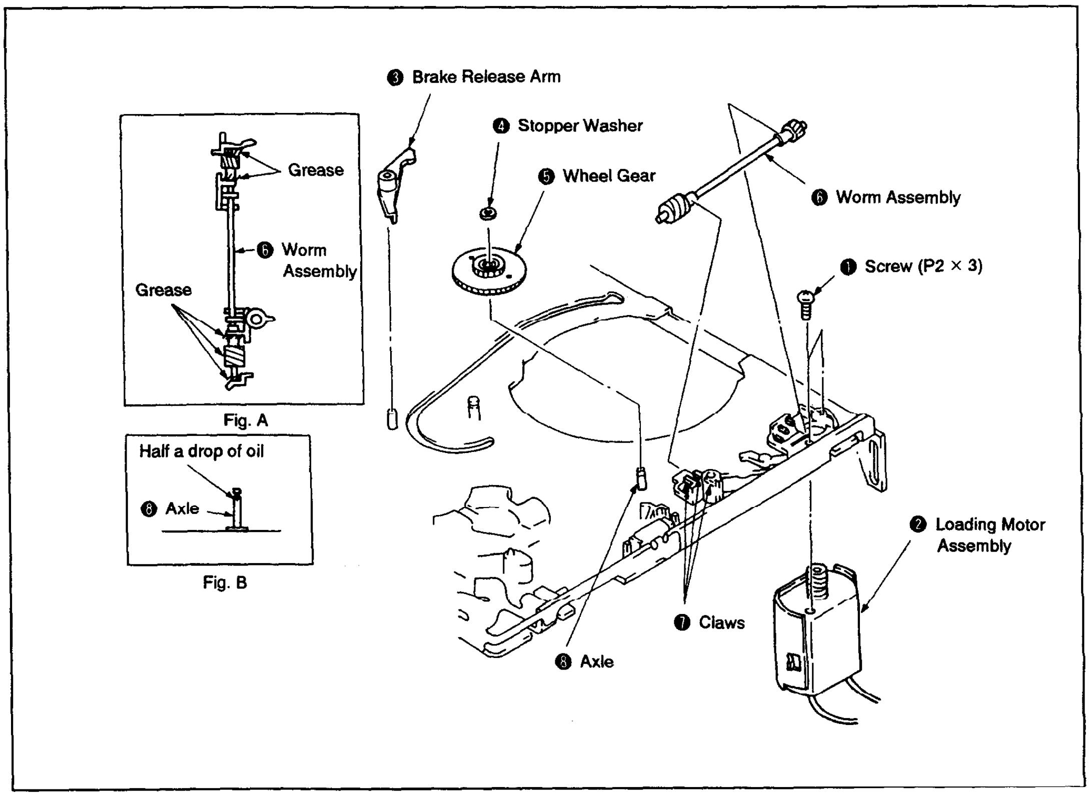

❸ Brake Release Arm
❹ Stopper Washer
❺ Wheel Gear
❻ Worm Assembly
❶ Screw (P2 × 3)
❷ Loading Motor Assembly
❼ Claws
❽ Axle
Grease
❻ Worm Assembly
Grease
Fig. A
Half a drop of oil
❽ Axle
Fig. B

Fig. 3-21.

3-21. ROTARY UPPER DRUM REPLACEMENT

1. Removal

- If possible, make a recording before removal.

1) Detach the six solderings ⓐ, then use a pair of tweezers or the like to confirm that the terminals passing through the board holes from below can move freely.
2) Remove the two screws ❶ (See Fig. 3-22).
3) Mount the jig ❹ (Ref. No. J-7) with the two supplied screws ❷, then screw the attached hexagon socket screws ❸ to the jig ❹. The rotary upper drum ❺ will move upward and come off (See Fig. 3-23).

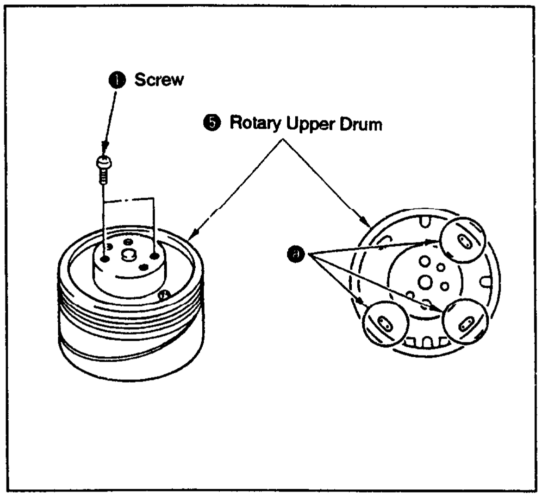


Fig. 3-22.

2. Installation

1) Wipe clean the flange surface and the rotary upper drum ❺ surface that makes contact with it, and confirm that they are free from dirt and scratches.
2) Insert the jig ❼ (Ref. No. J-7) into the drum positioning hole, then set the rotary upper drum ❺ by passing the jig through its positioning hole ❻.

   Note: Confirm that the terminals ❽ protrude slightly from the rotary upper drum board holes (See Fig. 3-24).
3) Remove the jig ❼ and push down the rotary upper drum ❺ gently by hand. If it does not go all the way down, secure it temporarily by tightening the two hexagon socket screws ❶ alternately.
4) Insert the jig ❼ into the positioning hole ❻ again and confirm that it goes in smoothly. If it does not, loosen the two screws ❶, repeat step 3 of the Removal paragraph and restart the setting procedure.
5) Tighten the screws ❶.
6) Solder the terminals ❽ (ⓐ in Fig. 3-22).

   Note: Take care that no solder flows below the board.

Note: After installing, be sure to perform tape path adjustment as described in section 4.

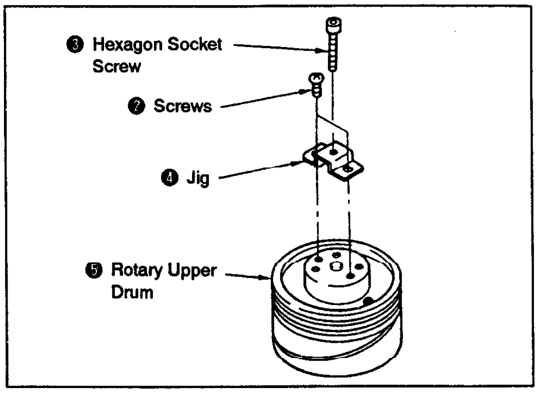


Fig. 3-23.

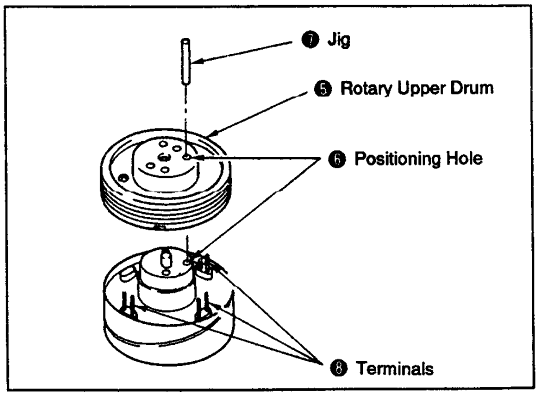


Fig. 3-24.

3-22. FWD BACK TENSION (See Fig. 3-25.)

1) Set the torque cassette (Ref. No. J-6).
2) Set the FWD mode and confirm that S reel table torque value is within 9 to 13 g•cm.
3) If the torque value does not meet the specification, adjust the adjust arm ❶.

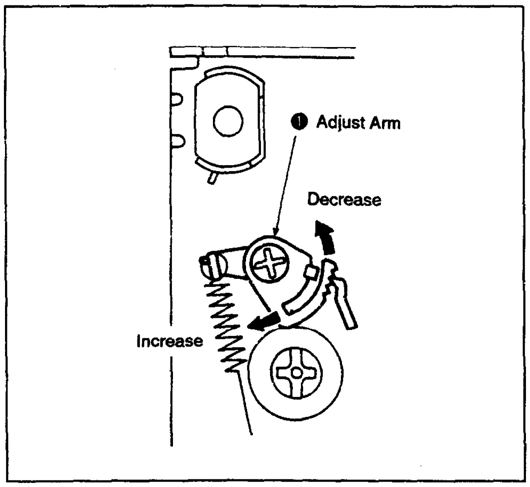


Fig. 3-25.

3-23. REEL TORQUE CHECK

1) Set the torque cassette.
2) Set the FWD mode and confirm that T reel table torque value is within 7 to 15 g•cm.
3) Set the REV mode and confirm that S reel table torque value is within 29 ± 6 g•cm.
4) Set the REV mode and confirm that T reel table torque value is within 13 to 25 g•cm.
5) If a torque value does not meet the specifications above, replace the corresponding reel table.

4. TAPE PATH ADJUSTMENT

[The Track Shift Mode]

In the 8 mm video system, instantaneous tape speed control is performed using four kinds of pilot signals, and high-precision tracking is achieved through the ATF (Automatic Track Finding) system. This makes a tracking control knob unnecessary and allows for precise tracing.

On the other hand, however, tape path adjustment presents some difficulties when the ATF system is used. Namely, since the ATF system will automatically compensate to some degree for head tracing errors, thorough adjustment is not possible.

This can be solved by setting the track shift mode for tracking fine adjustment. ATF will be compulsorily activated, shifting the tracking amount by a fixed amount (approx. 1/4) and thus making tracking fine adjustment easy. Furthermore, no track shift jigs are required.

4-1. TRACK SHIFT MODE SETTING

[Setting Procedure]

- Connect the TEST A and TEST B terminals to the COM terminal.
  Example:
  NTSC ········ GV-8
  PAL ·········· GV-8E
  Connect Pins ① and pin ③ of CN017 on the
  { SV-34 board (GV-8) / SV-35 board (GV-8E) } to pin ② of it. (See Fig. 4-1)

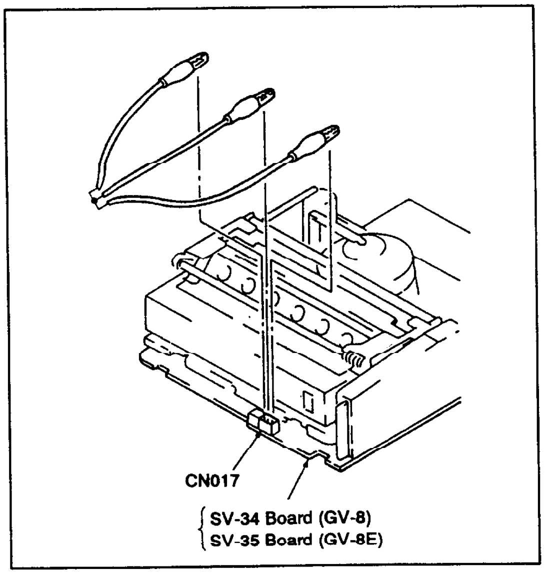
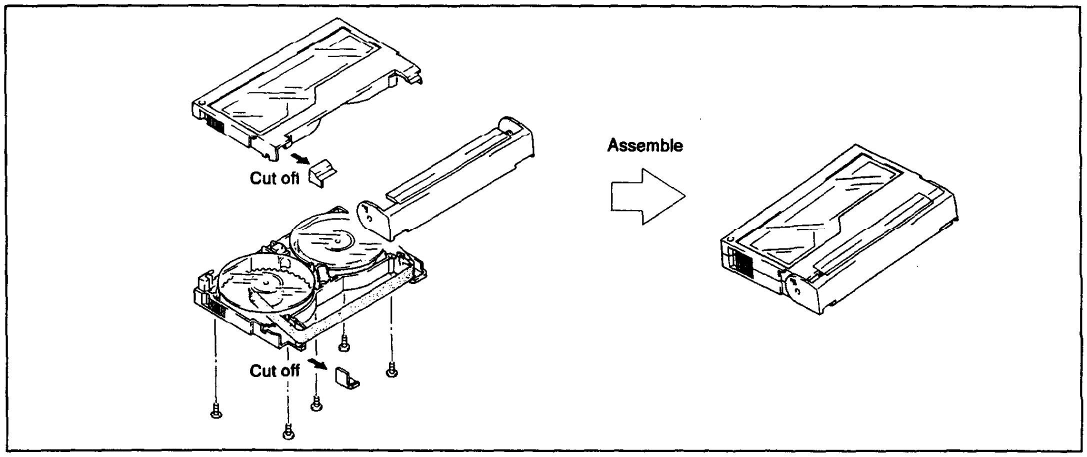


Fig. 4-1.

[Note on Adjustment of No.7 Guide (TG-7)]

The height adjustment screw for No.7 guide (TG-7) is located at some distance from the guide (refer to Fig. 4-2).
Therefore, when performing section 4-6. No.7 Guide (TG-7) Adjustment it is convenient to use the alignment tape for tracking (Ref. No. J-5), modified as follows, and perform adjustment in playback mode.


Cut off
Cut off
Assemble

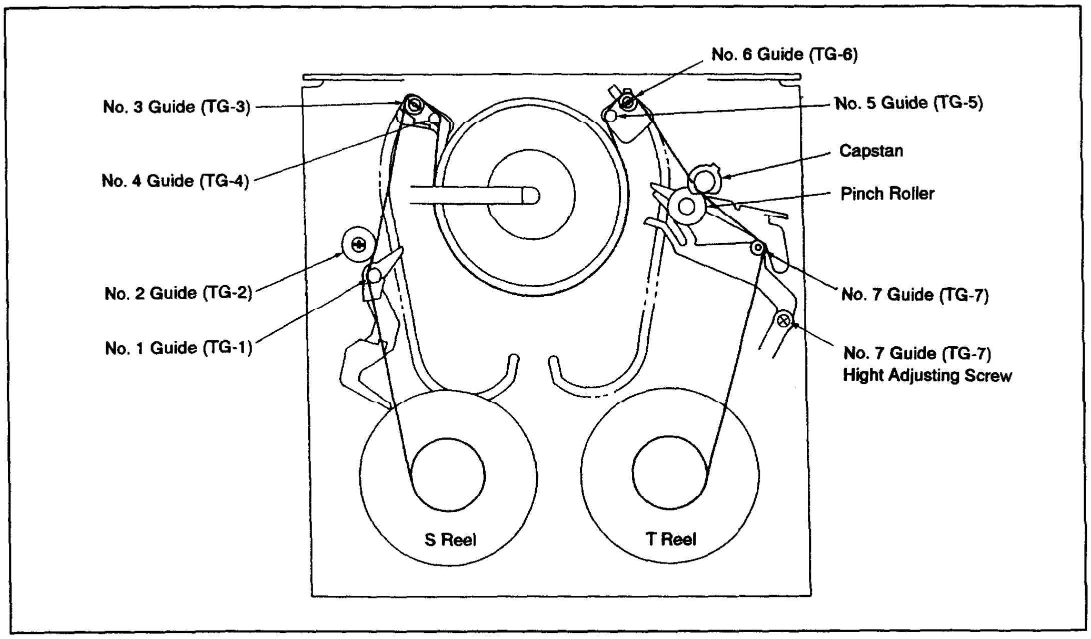

No. 6 Guide (TG-6)
No. 3 Guide (TG-3)
No. 5 Guide (TG-5)
Capstan
No. 4 Guide (TG-4)
Pinch Roller
No. 2 Guide (TG-2)
No. 7 Guide (TG-7)
No. 1 Guide (TG-1)
No. 7 Guide (TG-7)
Hight Adjusting Screw
S Reel
T Reel

Fig. 4-2.

4-2. PREPARATIONS FOR ADJUSTMENT

1) Clean tape path surfaces (tape guides, drum, capstan shaft, pinch roller) (See Fig. 4-2).
2) Connection of oscilloscope and output method of waveform.
   CH 1: RF signal output of the drum head (V RF OUT)
   Method for signal output:
   Short-circuit the external trigger output (RF SW. P) and GND.

   Example:
   NTSC ····· GV-8
   PAL ······· GV-8E
   CH 1: Pin ③ (V RF OUT) of CN018 on the
   { SV-34 board (GV-8)
   { SV-35 board (GV-8E)
   Method for signal output:
   Short-circuit pin ① (GND) and pin ② (RF SW.P) of CN018 on the
   { SV-34 board (GV-8)
   { SV-35 board (GV-8E)
3) Play back the alignment tape for tracking adjustment (Ref. No. J-5).
4) Confirm that both the entrance and exit side RF waveforms of the oscilloscope are flat (See Fig. 4-4). If they are not, adjust as follows.

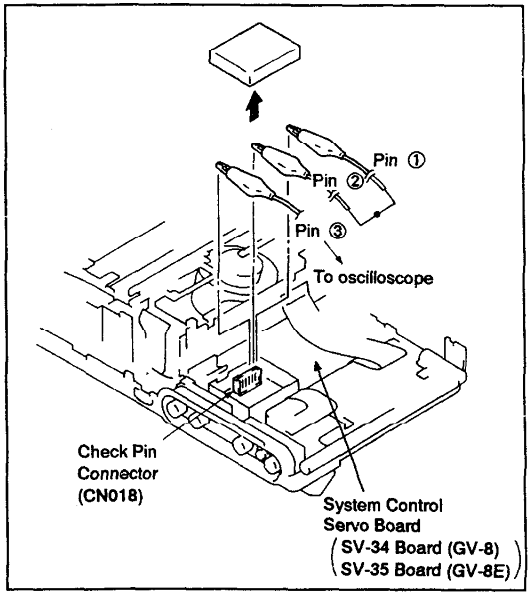

Pin ①
Pin ②
Pin ③
To oscilloscope
Check Pin Connector (CN018)
System Control Servo Board
(SV-34 Board (GV-8)
SV-35 Board (GV-8E))

Fig. 4-3.

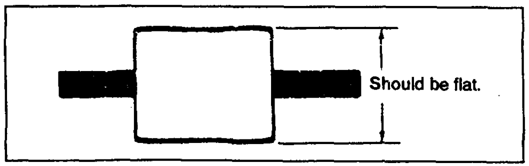

Should be flat.

Fig. 4-4.

4-3. TRACKING ADJUSTMENT (See Fig. 4-5.)

1) Play back the alignment tape for tracking adjustment.
2) Pass a hexagonal wrench, screwdriver (Ref. No. J-11) or the like through the hole ❶, loosen the lockscrew ❷ a little, then make the entrance side waveform flat by turning the No. 3 guide (TG-3) ❸.
3) Pass a hexagonal wrench, screwdriver or the like through the hole ❹, loosen the lockscrew ❺ a little, then make the exit side waveform flat by turning the No. 6 guide (TG-6) ❻.

Note: Take care not to loosen lockscrews too much, since guides come loose easily.

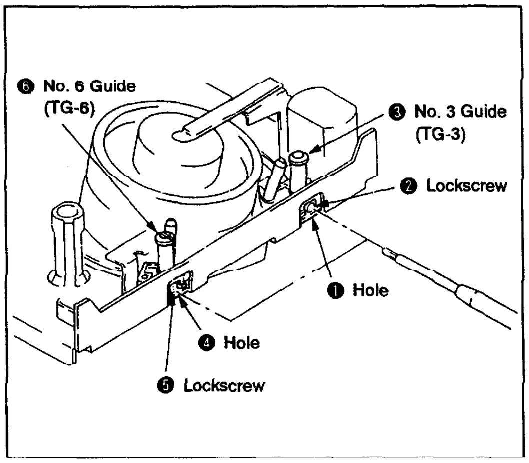

❻ No. 6 Guide (TG-6)
❸ No. 3 Guide (TG-3)
❷ Lockscrew
❶ Hole
❹ Hole
❺ Lockscrew

Fig. 4-5.

4-4. TRACKING FINE ADJUSTMENT (See Figs. 4-5. and 4-6.)

1) Play back the alignment tape for tracking adjustment and set the track shift mode.
2) Confirm whether the waveform is flat. If it is not, turn the No. 3 (TG-3) and No. 6 (TG-6) guides so that it becomes flat.
3) Fix the No. 3 guide ❸ by tightening its lockscrew ❷. Then confirm that the entrance side waveform has not changed.
4) Fix the No. 6 guide ❻ by tightening its lockscrew ❺. Then confirm that the exit side waveform has not changed.

Note: The set screws ❷ and ❺ should be tightened with a tightening torgue of approx. 200g•cm ± 10%.
If tightened too much, there is danger of damaging the thread.

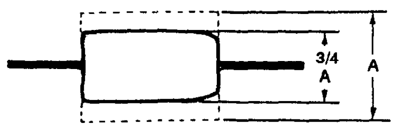


Fig. 4-6.

4-5. No. 2 GUIDE (TG-2) ADJUSTMENT

When the No. 2 guide has been turned or replaced, perform height presetting before this adjustment.

4-5-1. No. 2 Guide (TG-2) Height Presetting (See Fig. 4-7.)

1) Adjust the height from the mechanism chassis upper surface to the TG-2 upper flange ❶ upper surface to 18.6 mm by rotating the TG-2 upper flange ❶.

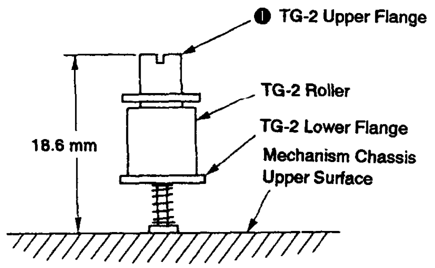


Fig. 4-7.

[Reference]
This U mechanism is equipped with four adjustable guides (TG-2, 3, 6 and 7). To raise or lower the respective guide rotate the corresponding adjustment screw as shown below.

Guide	Guide adjustment	Rotating direction of adjustment screw
TG-2, 3, 6	Raise	Counterclockwise
	Lower	Clockwise
TG-7	Raise	Counterclockwise
	Lower	Clockwise

4-5-2. No. 2 Guide (TG-2) Adjustment (See Figs. 4-8. and 4-9.)

1) Play back a thin tape like the P6-120MP, etc. and set the REV mode.
2) Confirm that the tape is not bent at the lower flange ❷ of the No. 2 guide (TG-2) ❶ (See Fig. 4-8). If it is, turn the upper flange ❸ of the No. 2 guide (TG-2) ❶ clockwise with a screwdriver, lowering it until the tape is straightened.
3) Play back the alignment tape for tracking adjustment.
4) Perform tracking adjustment and tracking fine adjustment as described in sections 4-3. and 4-4.
5) In the track shift mode, CUE/REV the tape, then play it back and confirm that the RF waveform rises flat within 2 seconds.
6) If the waveform is not normal (See Fig. 4-9), turn the upper flange ❸ of the No. 2 guide (TG-2) ❶ 90° counter-clockwise and repeat step 5.

   Repeat steps 5 and 6 until a normal waveform is obtained. Then, confirm that the tracking waveform has not changed. If it has, perform fine adjustment of entrance side tracking and repeat step 5.

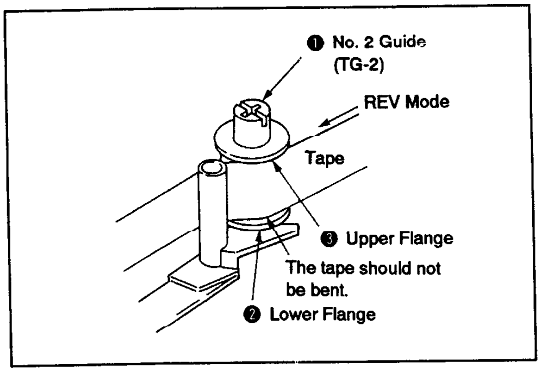

❶ No. 2 Guide (TG-2)
REV Mode
Tape
❸ Upper Flange
The tape should not be bent.
❷ Lower Flange

Fig. 4-8.

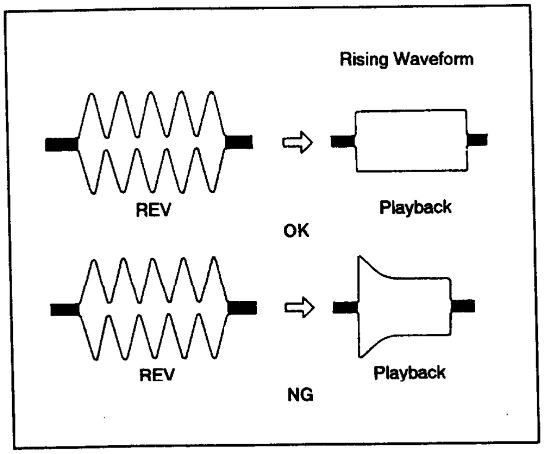

Rising Waveform
REV
OK
Playback
REV
NG
Playback

Fig. 4-9.

4-6. No. 7 GUIDE (TG-7) ADJUSTMENT (See Fig. 4-10.)

1) Play back the alignment tape for tracking adjustment and set the REV mode.
2) Confirm that the tape is not bent between the No. 6 guide (TG-6) ❶ and the capstan ❷. If it is, turn the hight adjusting screw ❹ of the No. 7 guide (TG-7) ❸ until the tape is straightened.
3) Set the playback mode again and confirm that the tape is not bent between the capstan ❷ and the hight adjusting screw ❹ of the No. 7 guide (specification:0.5 mm or less). If the tape is bent beyond the specification, turn the No. 7 guide (TG-7) ❸ until bending is within the specification (0.5 mm).

   If in the REV mode tape bending between the No. 6 guide (TG-6) ❶ and the capstan ❷ is 0.3 mm or less, adjustment can be considered completed.

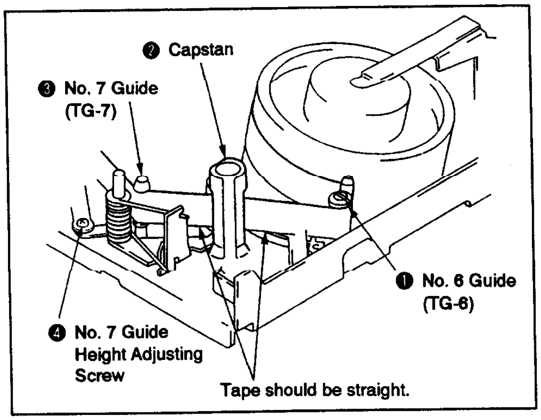

❷ Capstan
❸ No. 7 Guide (TG-7)
❶ No. 6 Guide (TG-6)
❹ No. 7 Guide Height Adjusting Screw
Tape should be straight.

Fig. 4-10.

4-7. CUE AND REV WAVEFORM CHECK (See Fig. 4-11.)

1) Play back the alignment tape for tracking adjustment and set the REV mode. Confirm that waveform peaks maintain a constant pitch of 5 seconds or more (See Fig. 4-11). In case pitch is not constant, perform section 4-4. Tracking Fine Adjustment and section 4-6. No. 7 Guide Adjustment.
2) Set the CUE mode. Confirm that waveform peaks still maintain a constant pitch of 5 seconds or more (See Fig. 4-11). Otherwise, perform section 4-4. Tracking Fine Adjustment.

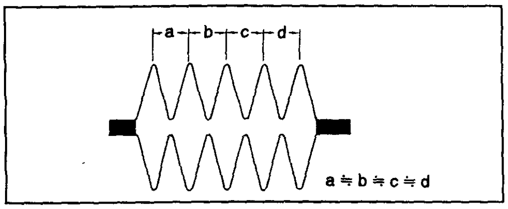


Fig. 4-11.

4-8. CHECK AFTER ADJUSTMENT

4-8-1. Tracking Check

1) Confirm that the amplitude of RF waveform is reduced to approx. 3/4 when the track shift mode is set (See Fig. 4-12).
2) Then, confirm that the minimum amplitude value (EMIN) is 65% of the maximum value (EMAX) or larger (See Fig. 4-13).
3) Confirm that no large fluctuations occur on the waveform (See Fig. 4-14).

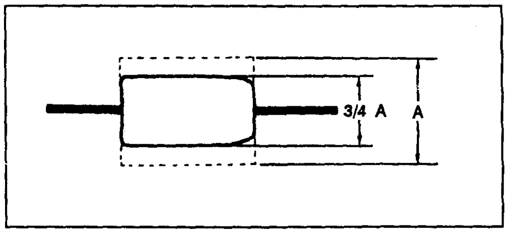


Fig. 4-12.

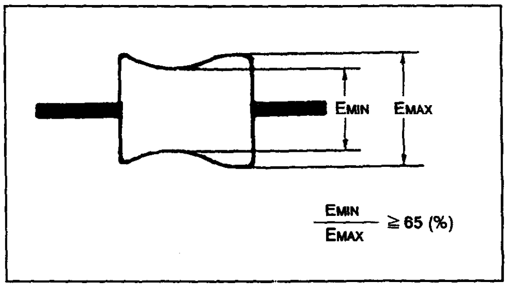


Fig. 4-13.

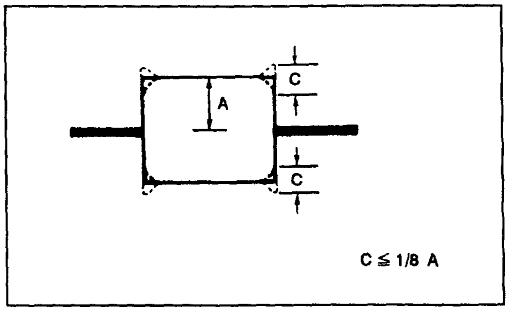


Fig. 4-14.

4-8-2. Rising Check (See Fig. 4-15.)

1) Play back the alignment tape for tracking adjustment.
2) Cancel the track shift mode.
3) Eject the tape, then load it again.
4) Set the playback mode and confirm that the RF waveform rises flat within 2 seconds. Also confirm that the tape is not bent around the pinch roller (See Fig. 4-15).
5) CUE/REV and FF/REW the tape, then play it back and confirm that the RF waveform rises flat within 2 seconds. Also confirm that the tape is not bent around the pinch roller.
6) Repeat steps 3) to 5) once more.

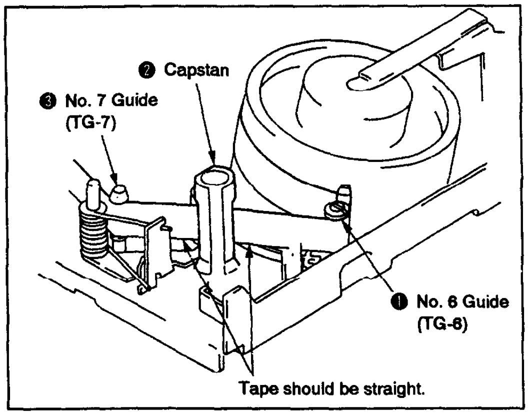

❷ Capstan
❸ No. 7 Guide (TG-7)
❶ No. 6 Guide (TG-6)
Tape should be straight.

Fig. 4-15.

4-8-3. Tape Path Check (See Fig. 4-16.)

1) Play back a thin tape like the P6-120MP (NTSC) or P5-90MP (PAL), etc. and confirm that no tape rising occurs, and that curling is less than 0.3 mm, at the lower flange of the No. 2 guide, the upper flange of the No. 3 guide, the upper flange of the No. 6 guide and the No. 7 guide upper and lower flanges.
2) Confirm that no tape rising occurs and that curling is less than 0.3 mm at the flanges of all guide when pressing the FF button in the playback mode to set the CUE mode, or the REW button to set the REV mode.

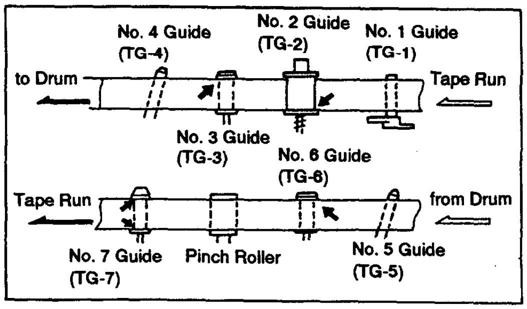

No. 4 Guide (TG-4)
No. 2 Guide (TG-2)
No. 1 Guide (TG-1)
to Drum
Tape Run
No. 3 Guide (TG-3)
No. 6 Guide (TG-6)
Tape Run
from Drum
No. 7 Guide (TG-7)
Pinch Roller
No. 5 Guide (TG-5)

Fig. 4-16.